

# MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL  
RAILROAD AND FINANCIAL NEWSPAPER.

## THE SOUTH'S OPPORTUNITY.

[New York Commercial.]

With an article recently published in the Financial Chronicle as its text, the Manufacturers' Record of Baltimore makes a timely and forcible appeal to the people of the South in the matter of unwarranted attacks on capital and corporations. Every intelligent man in the South closely connected with business interests, it says, knows that the agitation there against corporations and railroads and capitalists has proved to be a very serious hindrance to the work of Southern upbuilding. He knows that capital has been less ready to go South than it would have been had there never come to that section the curse that in South Carolina is known as "Tillmanism" and in Texas as "Hoggism." These "isms" have represented the fight of the demagogic politician against the conservative upbuilding interests that have been striving to develop the employment-creating resources of the Southern States.

And now the dismantling and removal of certain mills by the United States Steel Corporation prove not only that capital will not go to a locality where public sentiment appears to be in any measure unfriendly to it, but also that even when invested in what might seem to be a permanent form it has the power to protect itself by removal—and does not hesitate to exercise it. The incident ought therefore to bring sharply home to a certain element in the South the folly of frightening away what it ought to welcome. "Is the South ready," the Manufacturers' Record asks, "to utilize such an opportunity and to prove to the world that it will afford the most liberal, intelligent appreciation of the rights of corporations? If so, some good may come to it as a result of the strike in some of the plants of the United States Steel Corporation."

It sometimes requires a good deal of courage to send the truth home so bluntly. But the Manufacturers' Record is in an exceptionally strong position when it essays to fire this shot. It has been the firm friend and defender of the South from the very first hour of its establishment, and none knows this better and is more appreciative of it than the business men of the South. The advice can hardly fail to have a good effect.

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No. 1.

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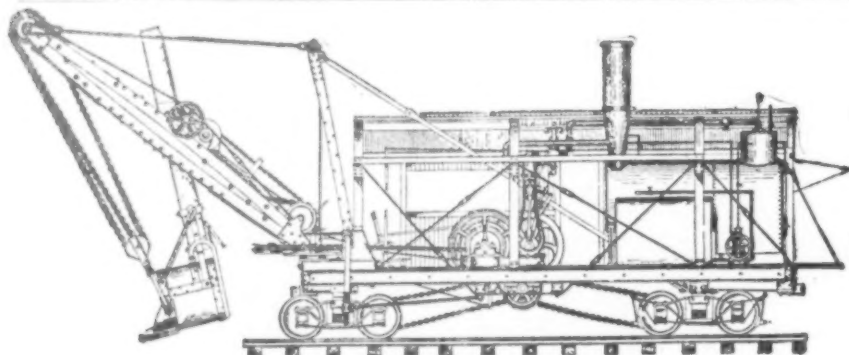
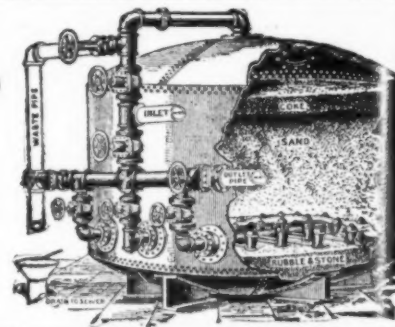
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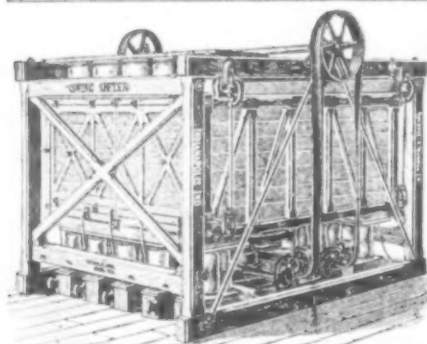
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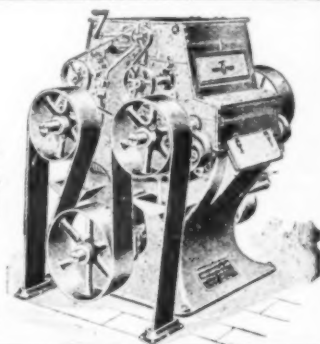
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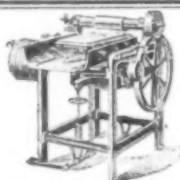


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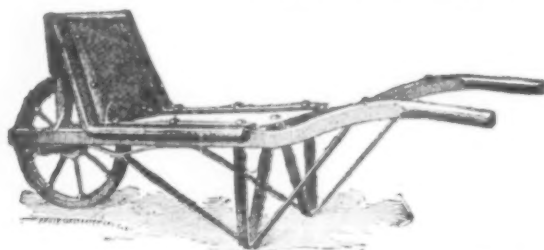
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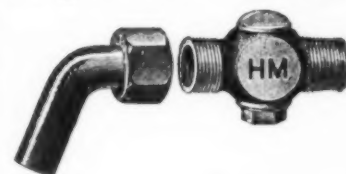
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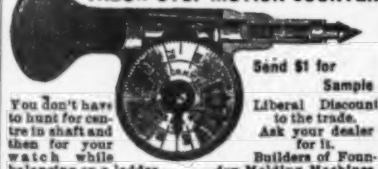
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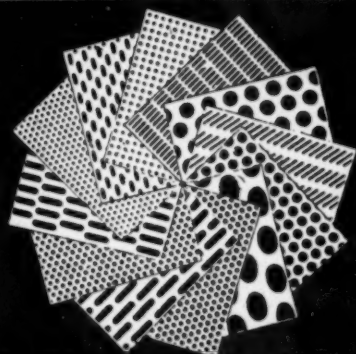
22d Year Begins Thursday, September 26th.

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Smith, Samuel J., & Co., Charlotte, N. C.  
Sprague Electric Co., New York, N. Y.  
Tanner Electric Mfg. Co., Pittsfield, Mass.  
Troyer Binford Elec. & Mfg. Co., Richmond, Va.  
Triumph Electric Co., Cincinnati, O.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

## Eave Trough Hangers, etc.

Heartly Mch., Variety Iron &amp; Tool Works, Toledo, O.

## Electric Contractors.

Alexander, Jr., Co., S. B., Charlotte, N. C.  
Jenks, W. H., Richmond, Va.  
Northern Elec. Mfg. Co., Madison, Wis.  
Stanley Elec. Mfg. Co., Pittsfield, Mass.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Weatherford & Hildebrand, Memphis, Tenn.  
Electrical Instruments.  
Bunnell, J. H., & Co., New York, N. Y.  
Northern Electric Supply Co., Madison, Wis.  
Stanley Electric Mfg. Co., Pittsfield, Mass.

## Electric Light and Power Plants.

Alexander, Jr., Co., S. B., Charlotte, N. C.  
Commercial Electric Co., Indianapolis, Ind.  
Crocker-Wheeler Co., Ampere, N. J.  
General Electric Co., Schenectady, N. Y.  
General Incandescent Arc Light Co., New York.  
Gregory Electric Co., Chicago, Ill.  
N. J. Foundry & Machine Co., Plainfield, N. J.  
Northern Electric Mfg. Co., Madison, Wis.  
Ridgway Dynamo & Engine Co., Ridgway, Pa.  
Smethurst & Allen, Philadelphia, Pa.  
Sprague Electric Co., New York, N. Y.  
Stanley Electric Mfg. Co., Pittsfield, Mass.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Triumph Electric Co., Cincinnati, O.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

## Electric Railway Equipment.

Alexander, Jr., Co., S. B., Charlotte, N. C.  
General Electric Co., Schenectady, N. Y.  
Northern Electric Mfg. Co., Madison, Wis.  
Sprague Electric Co., New York, N. Y.  
Stanley Electric Mfg. Co., Pittsfield, Mass.  
Triumph Electric Co., Cincinnati, O.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.  
Western Electrical Supply Co., St. Louis, Mo.  
Electrical Repairs.  
Alexander, Jr., Co., S. B., Charlotte, N. C.  
General Incandescent Arc Light Co., New York.  
Gregory Electric Co., Chicago, Ill.  
Guarantee Electric Co., Chicago, Ill.  
Kentucky Electrical Co., Owensboro, Ky.  
Smith, Samuel J., & Co., Charlotte, N. C.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.

## Electrical Supplies.

Alexander, Jr., Co., S. B., Charlotte, N. C.  
Bunnell, J. H., & Co., New York.  
General Electric Co., Schenectady, N. Y.  
Gregory Electric Co., Chicago, Ill.  
Guarantee Electric Co., Chicago, Ill.  
Jenks, W. H., Richmond, Va.  
Johns Mfg. Co., W. W., New York, N. Y.  
Kentucky Electrical Co., Owensboro, Ky.  
McKay Engineering Co., Baltimore, Md.  
Northern Electric Mfg. Co., Madison, Wis.  
Smith, Samuel J., & Co., Charlotte, N. C.  
Stanley Electric Mfg. Co., Pittsfield, Mass.  
Sturtevant Co., B. F., Boston, Mass.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Triumph Electric Co., Cincinnati, O.  
Western Electrical Supply Co., St. Louis, Mo.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

## Electric Locomotives. (See Locomotive Builders.)

## Electric Trucks.

Baldwin Locomotive Works, Philadelphia, Pa.

## Electrotypers.

American Type Foundry Co., Baltimore, Md.  
Spencer & Hall, Baltimore, Md.

## Elevators.

Albro-Clem Elevator Co., Philadelphia, Pa.  
Aultman Co., The, Canton, O.  
Bartlett, Hayward & Co., Baltimore, Md.  
Bates, James, Sons, Baltimore, Md.  
Craig Ridgway Co., Conestoga, Pa.  
Curran, Jas. H., Elevator Co., Cincinnati, O.  
Eaton & Prince Co., Chicago, Ill.  
Fairmount Machine Co., Philadelphia, Pa.  
Faunt Le Roy & Co., Baltimore, Md.  
Link-Belt Engineering Co., Philadelphia, Pa.  
Maryland Foundry & Machine Co., Baltimore, Md.  
Morse, Williams & Co., Philadelphia, Pa.  
Parkhurst Bros. & Co., Indianapolis, Ind.  
Park Mfg. Co., Charlotte, N. C.  
Spindel, J. G., Reading, Pa.  
Union Elevator & Machine Co., Chicago, Ill.  
Westbrooks, J. B., Fdry. & Mch. Co., Danville, Va.

## Elevator Buckets.

Caldwell, H. W., & Son, Co., Chicago, Ill.  
Clark Co., The W. J., Salem, O.  
Dodge Mfg. Co., Mishawaka, Ind.  
Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Engineering Co., Philadelphia, Pa.  
Tate, Jones & Co., Pittsburgh, Pa.

## Elevator Enclosures and Cabs.

Balderson, H., & Son, Baltimore, Md.  
Bolles, J. E., Iron & Wire Works, Detroit, Mich.  
Dow Wire Work Co., Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Ludlow-Saylor Wire Co., The, St. Louis, Mo.  
Myers Mfg. Co., The, Fred J., Hamilton, O.

## Elevator Rope. (See Wire Rope.)

## Emery.

Carborundum Co., The, Niagara Falls, N. Y.  
Scranton Carborundum & Emery Wheel Co., Scranton, Pa.  
Tantle Co., The, Stroudsburg, Pa.

## Emery Wheels. (See Grinding and Polishing Machinery.)

## Engineers. (Electric, Consulting, Contracting Mechanical and Mining.)

Alber & Byrne, Birmingham, Ala.  
Alcott, T. C., & Son, Mount Holly, N. J.

## Adams, Henry, Baltimore, Md.

American Bridge Co., New York, N. Y.  
Blanton, Jr., E. A., Philadelphia, Pa.  
Collier & Brown, Atlantic City, N. J.  
Erikson, Edw. E., Pittsburgh, Pa.  
Given, Wm. M., Birmingham, Ala.  
Hall, Charles A., M. E., Mobile, Ala.  
Hutton Engineering Co., Lexington, Va.  
Kennedy, Walter, Pittsburgh, Pa.  
Ledger, Frank, Atlanta, Ga.  
McRae, M. W., Atlanta, Ga.  
Morrison & Kindervater, Richmond, Va.  
Nicol, Baur & Foster, Mobile, Ala.  
Northern Elec. Mfg. Co., Madison, Wis.  
Perry, Nathaniel V., Atlanta, Ga.  
Pratt & Boltwood, Chapel Hill, N. C.  
Pratt Laboratory, N. F., Atlanta, Ga.  
Robinson Contracting Co., Geo. A., Mobile, Ala.  
Stanley Elec. Mfg. Co., Pittsfield, Mass.  
Thorburn Reid, New York, N. Y.  
Tower-Binford Elec. & Mfg. Co., Richmond, Va.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Weatherford & Hildebrand, Memphis, Tenn.  
Witherow, Jas. P., Pittsburgh, Pa.

## Engines.

Alexander, Jr., Co., S. B., Charlotte, N. C.  
American Blower Co., Detroit, Mich.  
Atlas Engine Works, Indianapolis, Ind.  
Ball Engine Co., The, Erie, Pa.  
Ball & Wood Co., New York, N. Y.  
Boston Blower Co., Hyde Park, Mass.  
Brownell, The, & Co., Dayton, O.  
Buffalo Forge Co., Buffalo, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Chicago House Warming Co., Chicago, Ill.  
Farouhar Co., A. B., New York, N. Y.  
Frick Co., Waynesboro, Pa.  
Gibbs, W. H., & Co., Columbia, S. C.  
Greenwald Co., I. & E., Cincinnati, O.  
Hardie-Tynes Fdy. & Mch. Co., Birmingham, Ala.  
Harrington Fdy. & Mch. Co., Harrisonburg, Va.  
High Point Machine Works, High Point, N. C.  
Hill, Wm. E., & Co., Kalamazoo, Mich.  
International Power Co., Providence, E. I.  
Lefell, James, & Co., Springfield, O.  
Lidgerwood Mfg. Co., New York, N. Y.  
Lombard Iron Works & Supply Co., Atlanta, Ga.  
McClave, Hamilton & Rimmer, New York, N. Y.  
McIntosh, Seymour & Co., New York, N. Y.  
Murray Iron Works Co., Burlington, Iowa.  
Neckelburg Iron Works, Charlotte, N. C.  
Newport Iron Ship's & Dry Dock Co., N. News, Va.  
Phillips, Edward W., Baltimore, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Remington Machine Co., Wilmington, Del.  
Ridgway Dynamo & Engine Co., Ridgway, Pa.  
Schofield, J. S., Sons Co., Macon, Ga.  
Smith, Constance Co., Richmond, Va.  
Southern Eng. & Boiler Works, Jackson, Tenn.  
Southworth Foundry & Machine Co., Philadelphia, Pa.  
St. Louis Iron & Machine Works, St. Louis, Mo.  
Struthers, Wells & Co., Warren, Pa.  
Sturtevant Co., B. F., Boston, Mass.  
Union Iron Works Co., Selma, Ala.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Valley Iron Works, Williamsport, Pa.  
Viller Mfg. Co., Milwaukee, Wis.  
Wetherill, Robert, & Co., Chester, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.  
York Mfg. Co., York, Pa.

## Engines. (Gas and Gasoline.)

Blakeslee Mfg. Co., The, Birmingham, Ala.  
Columbus Machine Co., Columbus, O.  
Cornell Machine Co., Chicago, Ill.  
Fairbanks Co., Baltimore, Md.  
Olds Motor Works, Detroit, Mich.  
Otto Gas Engine Works, Philadelphia, Pa.  
Struthers, Wells & Co., Warren, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.  
Engines. (Oil.)  
Aultman Co., The, Canton, O.  
Engravers.  
Alpha-Photo Engraver Co., Baltimore, Md.  
Baltimore Engraving Co., Baltimore, Md.  
Exhaust Heads.  
Bonar, James, & Co., Pittsburgh, Pa.  
Burt Mfg. Co., Akron, O.  
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.  
Exhausters.  
Cornell, J. B., & J. M., New York, N. Y.  
Expansion Bolts.  
New Jersey Foundry & Machine Co., Plainfield, N. J.  
Fans. (Electric Ceiling, Etc.)  
Paragon Fan Motor Co., New York, N. Y.  
Fans. (Ventilating.) (See Blowers, Exhaust Fans.)  
Fans. (Hand.)  
Frantz-Gage Mfg. Co., The, Chicago, Ill.  
Feed-Water Heaters and Purifiers.  
Berryman, Jas., Philadelphia, Pa.  
Bonar, James, & Co., Pittsburgh, Pa.  
Gem City Boiler Co., Dayton, O.  
Green Fuel Economizer Co., Matamoras, N. Y.  
Harrison Safety Boiler Works, Philadelphia, Pa.  
Hawley Down Draft Furnace Co., The, Atlanta, Ga.  
Kelley, Benj. F., & Son, New York, N. Y.  
National Pipe Bending Co., New Haven, Conn.  
Park Mfg. Co., Charlotte, N. C.  
Patterson, Frank L., New York, N. Y.  
Phillips, E. W., Baltimore, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Scalfe, Wm. B., & Sons, Pittsburgh, Pa.  
Stillwell-Bierce & Smith-Valle Co., Dayton, O.  
Taunton Locomotive Mfg. Co., The, Taunton, Mass.  
Warren Webster Co., Camden, N. J.

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Park Mfg. Co., Charlotte, N. C.  
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Engines. (Oil.)  
Aultman Co., The, Canton, O.  
Engravers.  
Alpha-Photo Engraver Co., Baltimore, Md.  
Baltimore Engraving Co., Baltimore, Md.  
Exhaust Heads.  
Bonar, James, & Co., Pittsburgh, Pa.  
Burt Mfg. Co., Akron, O.  
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.  
Exhausters.  
Cornell, J. B., & J. M., New York, N. Y.  
Expansion Bolts.  
New Jersey Foundry & Machine Co., Plainfield, N. J.  
Fans. (Electric Ceiling, Etc.)  
Paragon Fan Motor Co., New York, N. Y.  
Fans. (Ventilating.) (See Blowers, Exhaust Fans.)  
Fans. (Hand.)  
Frantz-Gage Mfg. Co., The, Chicago, Ill.  
Feed-Water Heaters and Purifiers.  
Berryman, Jas., Philadelphia, Pa.  
Bonar, James, & Co., Pittsburgh, Pa.  
Gem City Boiler Co., Dayton, O.  
Green Fuel Economizer Co., Matamoras, N. Y.  
Harrison Safety Boiler Works, Philadelphia, Pa.  
Hawley Down Draft Furnace Co., The, Atlanta, Ga.  
Kelley, Benj. F., & Son, New York, N. Y.  
National Pipe Bending Co., New Haven, Conn.  
Park Mfg. Co., Charlotte, N. C.  
Patterson, Frank L., New York, N. Y.  
Phillips, E. W., Baltimore, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Scalfe, Wm. B., & Sons, Pittsburgh, Pa.  
Stillwell-Bierce & Smith-Valle Co., Dayton, O.  
Taunton Locomotive Mfg. Co., The, Taunton, Mass.  
Warren Webster Co., Camden, N. J.

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**FIRE-RELT**  
 PURE ASBESTOS  
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 MADE IN SECTIONS  
 FIT STANDARD PIPE  
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 ASBESTOS MATERIALS  
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And VENTILATORS.  
 MADE OF SHEET METAL.  
 Proof against leaks from weather and condensation.  
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 White, Buff, Speckled and  
 Gray Front Bricks  
 In All Sizes and Shapes. FIRE BRICK.



Nothing to get out of order:  
 no battery,  
 no wires,  
 no trouble.

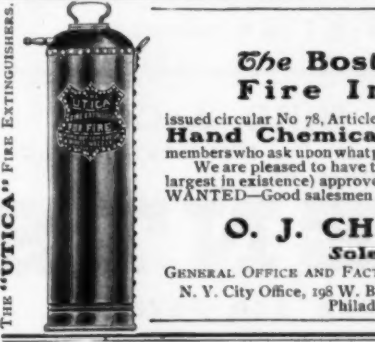
The blades are adjustable, and the whole fan can be carried in the pocket without inconvenience. It is operated by opening and closing the hand in the same manner as one would use an ordinary curling iron.

The blades revolve at the speed of 4,000 revolutions per minute and will throw a strong current of air as far as an electric fan of the same size.

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We are pleased to have the above Mutual Fire Insurance Co. (one of the largest in existence) approve of the "UTICA."

WANTED—Good salesmen to spend their entire time selling the "UTICA."

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 of all shapes and sizes, and shippers of Fire Clay and Glass Sand. Correspondence solicited and prices quoted delivered anywhere.

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Pawtucket,	- R. I.
Anderson,	- Ind.
Paterson,	- N. J.
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Kent,	- Ohio.

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GREAT WESTERN.  
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GOLD MEDAL.

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**PORTLAND CEMENT.**  
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Mixing  
Highest

These two expressions comprehend all that is desirable—we might say, "the maximum of efficiency"—in a concrete mixer. Results—quality, quantity and cost of product—are what the engineer and contractor are after. A mixer that will turn out a product whose quality cannot be surpassed and in quantity greater than that possible from other makes, and at a minimum of cost, is a pretty good machine to have, is it not? Such is the record maintained by the stationary and portable types of

## RANSOME CONCRETE MIXERS

and it is upon such guarantee that they are sold.

"They are surely the greatest machines for the purpose ever invented." We are always glad to answer all inquiries and give any information desired.

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Designers and Manufacturers of Concrete Machinery,  
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Proportions—  
1 part cement, 2 parts bar sand,  
4 parts screenings (stone),  
8 parts 1 1/4 inch stone.

Crushing test after 28 days **202 Tons per cubic foot.**  
Write **CHARLES WARNER COMPANY,**  
New York. Philada. Wilmington.

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PHOSPHATES, MINERALS, FEEDS,  
SALTS, Etc.

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Importers and Wholesale Dealers in  
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are expensive and superfluous  
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MOSHANNON COAL.**

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would be only as large as this ad.

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**Machine Screws**

Made to Order and Carried in Stock.  
Write for Estimates.

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Cost  
of  
Mixing  
Lowest



## Classified Index of Advertisers.

FOR ALPHABETICAL INDEX See Page 39.

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Bailey-Lesby Co., The, Charleston, S. C.  
 Childs Co., O. J., Utica, N. Y.  
 General Fire Extinguisher Co., Providence, R. I.  
 International Sprinkler Co., Philadelphia, Pa.

## Fire Escapes.

Bolles Iron & Wire Works, J. E., Detroit, Mich.  
 Dow Wire Works Co., Louisville, Ky.

## Flooring. (Polished Hardwood.)

Adams, J. M., Baltimore, Md.  
 Wilce Co., The T., Chicago, Ill.

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Alding Co., Inc., J. R., Brooklyn, N. Y.  
 Caldwell, H. W., & Son Co., Chicago, Ill.  
 Dehner-Wuerfel Mill Bldg. Co., St. Louis, Mo.  
 DeLoach Mill Mfg. Co., Atlanta, Ga.  
 Nordyke & Marmon Co., Indianapolis, Ind.  
 Salem Machine Works, Salem, Va.  
 Sprout, Waldron & Co., Muncy, Pa.  
 Starr, B. F., & Co., Baltimore, Md.  
 Wolf Co., Chambersburg, Pa.

## Forges.

Boston Blower Co., Hyde Park, Mass.  
 Buffalo Forge Co., Buffalo, N. Y.  
 Crumlish Forge Co., Buffalo, N. Y.  
 Sturtevant Co., B. F., Boston, Mass.

## Foundry Equipment and Supplies.

Etting, Edw. J., Philadelphia, Pa.  
 Hill & Griffith Co., Cincinnati, O.  
 Obermayer Co., S., Cincinnati, O.  
 Paxson Co., J. W., Philadelphia, Pa.

## Foundry Ladles. (See Foundry Equipment)

Wilson, H. McK., & Co., St. Louis, Mo.

## Fuel Economizers.

Broomell, Schmidt & Co., Ltd., York, Pa.  
 Green Fuel Economizer Co., Matteawan, N. Y.

## Fuel Oil Equipment and Machinery.

Petroleum Iron Works Co., Washington, Pa.  
 Rockwell Engineering Co., New York.

## Furnace Builders.

Erikson, Edw. E., Pittsburg, Pa.  
 Kennedy, Walter, Pittsburg, Pa.  
 Means & Fulton Iron Works, Birmingham, Ala.  
 Withrow, Jas. P., Pittsburg, Pa.

## Furnace Heating. (Stoves.)

Richmond Stove Co., Norwich, Conn.

## Furnaces. (Metallurgical.)

Rockwell Engineering Co., New York, N. Y.

## Fuses. (Wire Blocks, Fuses etc.)

American Electric Fuse Co., Adrian, Mich.

## Gages (Recording) and Counters.

American Steam Gauge Co., Boston, Mass.  
 Crosby Steam Gauge & Valve Co., Boston, Mass.

## Galvanized Sheets.

American Sheet Steel Co., New York, N. Y.

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Jacobson Machine Manufacturing Co., Warren, Pa.

## Gas Producers.

Erikson, Edward E., Pittsburg, Pa.  
 Smythe Co., The S. R., Pittsburg, Pa.  
 Wood, R. D., & Co., Philadelphia, Pa.

## Gas and Steam Fitters' Tools.

Saunders' Sons, D., Yonkers, N. Y.

## Gaskets. (Rubber.)

Boston Belting Co., Boston, Mass.

## Gear Cutting Machines.

Whitton Machine Co., D. E., New London, Conn.

## Gears and Pinions. (Raw Hide.)

New Process Rawhide Co., Syracuse, N. Y.

## Gearing.

Chester Steel Castings Co., Philadelphia, Pa.  
 Fairmount Machine Co., Philadelphia, Pa.  
 Jeffrey Mfg. Co., The, Columbus, O.

## Grain Elevator Supplies.

Link-Belt Engineering Co., Philadelphia, Pa.  
 Morse, William & Co., Philadelphia, Pa.  
 New Process Rawhide Co., Syracuse, N. Y.  
 Smith Co., S. Morgan, York, Pa.

## Grates and Grate Bars.

Kelly Pdry. & Mch. Co., Gothen, Ind.  
 McClave, Brooks & Co., Scranton, Pa.

## Grates. (Domestic.)

Burnham Grate Co., Huntsville, Ala.

## Grain Elevator Supplies.

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 Caldwell, H. W., & Son Co., Chicago, Ill.  
 Clark Co., The W. J., Salem, O.

## Grain Elevator Supplies.

Dodge Mfg. Co., Mishawaka, Ind.  
 Jeffrey Mfg. Co., Columbus, O.  
 Link-Belt Engineering Co., Nicetown, (Phila.) Pa.

## Graphite.

Detroit Graphite Mfg. Co., Detroit, Mich.  
 Dixon Crucible Co., Jos., Jersey City, N. J.  
 Hill & Griffith Co., Cincinnati, O.

## Greases. (Lubricating.)

Cook's Sons, Adam, New York, N. Y.  
 Robinson, Wm. C., & Son, Baltimore, Md.

## Grinding and Polishing Mch.

Abrasive Material Co., The, Philadelphia, Pa.  
 Builders' Iron Foundry, Providence, R. I.  
 Carborundum Co., The, Niagara Falls, N. Y.

## Groovers.

Norton Emery Wheel Co., Worcester, Mass.  
 Scranton Corundum & Emery Wheel Co., Scranton, Pa.  
 Sturtevant Mill Co., Boston, Mass.

## Hammers. (Steam and Power.)

Dupont Mfg. Co., St. Johnsbury, Vt.  
 Robinson, J. M., & Co., Cincinnati, O.

## Handle Mch. (See Woodwork's Mch.)

Egan Co., The, Cincinnati, O.  
 Fay, J. A., & Co., Cincinnati, O.  
 Root, B. M., York, Pa.

## Hardware Specialties.

Covert Mfg. Co., West Troy, N. Y.  
 Cronk Hanger Co., Elmira, N. Y.  
 Schaefer, W. J., & Co., New York, N. Y.

## Hardwood Flooring.

Adams, J. M., Baltimore, Md.  
 Wilce Co., The T., Chicago, Ill.

## Hay Tools.

Myers & Bro., F. E., Ashland, O.

## Heating Apparatus.

American Blower Co., Detroit, Mich.  
 Boston Blower Co., Hyde Park, Mass.  
 Downman Mfg. Co., Atlanta, Ga.

## Holding Machinery.

Bunnell Machinery Co., Chicago, Ill.  
 Byers Machine Co., John F., Ravenna, O.  
 Carlin Machinery & Supply Co., Allegheny, Pa.

## Holding Machinery.

Case Manufacturing Co., The, Columbus, O.  
 Contractors' Plant Mfg. Co., Buffalo, N. Y.

## Holding Machinery.

Exeter Machine Works, Exeter, N. H.  
 Monitor Steam Generator Mfg. Co., Baltimore, Md.  
 Peck-Hammond Co., The, Cincinnati, O.

## Holding Machinery.

Richmond Stove Works, Norwich, Conn.  
 Sturtevant Co., B. F., Boston, Mass.  
 Vapor Heating Co., York, Pa.

## Holding Machinery.

Warren Webster Co., Camden, N. J.

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 Vapor Heating Co., York, Pa.

## Holding Machinery.

Warren Webster Co., Camden, N. J.

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 Hunt Co., G. W., West New Brighton, N. Y.  
 Jeffrey Mfg. Co., The, Columbus, O.  
 Link-Belt Engineering Co., Philadelphia, Pa.  
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 Males Co., The, Cincinnati, O.  
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 Sullivan Machinery Co., Chicago, Ill.

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 Kureks Fire Hose Co., New York, N. Y.  
 N. J. Car Spring & Rub. Co., Jersey City, N. J.  
 Peerless Rubber Mfg. Co., New York, N. Y.  
 Rhoads, J. E., & Sons, Wilmington, Del.  
 Textile Mill Supply Co., Charlotte, N. C.

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 Clark Co., W. J., Salem, O.  
 Hose Reel. (Fire.)  
 Cliff & Gilbert Co., New York, N. Y.

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 New Atlantic Hotel, Norfolk, Va.

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 Ludlow Valve Mfg. Co., Troy, N. Y.  
 Wood, R. D., & Co., Philadelphia, Pa.

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 Smythe Co., The S. R., Pittsburg, Pa.  
 Wood, R. D., & Co., Philadelphia, Pa.

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Remington Machine Co., Wilmington, Del.

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Wolf Co., The Fred W., Chicago, Ill.

York Mfg. Co., York, Pa.

Incorporators. (Companies.)

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Magid, Louis B., & Co., New York, N. Y.

Indicators. (Steam Engines.)

American Steam Gauge Co., Jamaica Plain, Mass.

Crosby Steam Gauge & Valve Co., Boston, Mass.

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Stuebner Iron Works, G. L., Long Island City, N. Y.

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American Injector Co., Detroit, Mich.

Jenkins Bros., New York, N. Y.

Lunkenheimer Co., Cincinnati, O.

Ohio Injector Co., Wadsworth, Ohio.

Penberthy Injector Co., Detroit, Mich.

Watson, N. A., Erie, Pa.

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American Sheet Steel Co., New York, N. Y.

American Steel Hoop Co., Pittsburg, Pa.

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Clark, W. J., Co., Salem, O.

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Chicago Knife Works, Chicago, Ill.

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Champion Machine Co., Philadelphia, Pa.

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Mayo Knitting Machine & Needle Co., Franklin, N. H.

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Nye & Tredick, Philadelphia, Pa.

Scott & Williams, Philadelphia, Pa.

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General Electric Co., Schenectady, N. Y.

General Incandescent Arc Light Co., New York, N. Y.

Gregory Electric Co., Chicago, Ill.

Kentucky Electrical Co., Owensboro, Ky.

Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

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Lamp. (Incandescent) Cleaner.

Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.

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Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.

Lamp. (Incandescent) Renewer.

Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.

Lamp. (Incandescent) Hydro Carbon.

Kilton Hydro Carbon, H. & I. L., Co., Phila., Pa.

Lands.

Bordenkircher, Samuel, Cleveland, O.

Brobston, Fendig & Co., Brunswick, Ga.

Connor, W. D., St. George, S. C.

Hornaday, J. P., Cincinnati, O.

Killebrew, J. B., Industrial and Immigration Agent, Nashville, Tenn.

Richards, M. V., Land & Industrial Agt., Wash., D. C.

Southern States Trust Co., Charlotte, N. C.

Sutherland, Howard, Land Agent, Elkins, W. Va.

Watson, R. E., Atlanta, Ga.

Lanterns.

Dietz Co., B. E., New York.

Lathes. (Engines.)

American Tool Works Co., Cincinnati, O.

McCabe, J. J., New York, N. Y.

Schumacher & Boye, Cincinnati, O.

Laundry Machinery.

Adams Laundry Machinery Co., Troy, N. Y.

Sinclair Co., S. H., Chicago, Ill.

Wilson Laundry Machinery Co., Columbia, Pa.

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Robertson Mfg. Co., James, Baltimore, Md.

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Magnolia Metal Co., New York, N. Y.

Hierz, Theo., & Son, St. Louis, Mo.

Ryan & Co., J. J., Chicago, Ill.

Lime.

Carolina Portland Cement Co., Charleston, S. C.

Southeastern Lime & Cement Co., Charleston, S. C.

Locomotive Builders. (See Railroad Equipment and Supplies.)

American Locomotive Co., New York, N. Y.

Baldwin Locomotive Works, Philadelphia, Pa.

Climax Mfg. Co., Corry, Pa.

Males Co., Cincinnati, O.

Porter Co., H. E., Pittsburg, Pa.

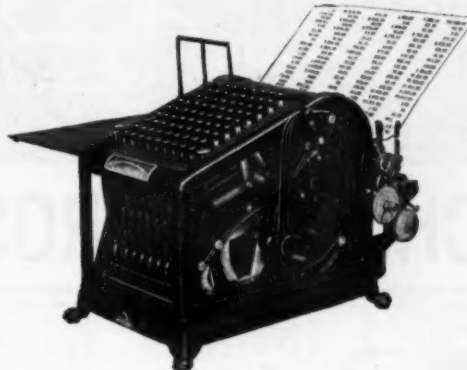
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Spartanburg Loom Harness Co., Spartanburg, S. C.

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Trial  
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Minutes.No  
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Work.Ask your  
Bank  
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Anything.

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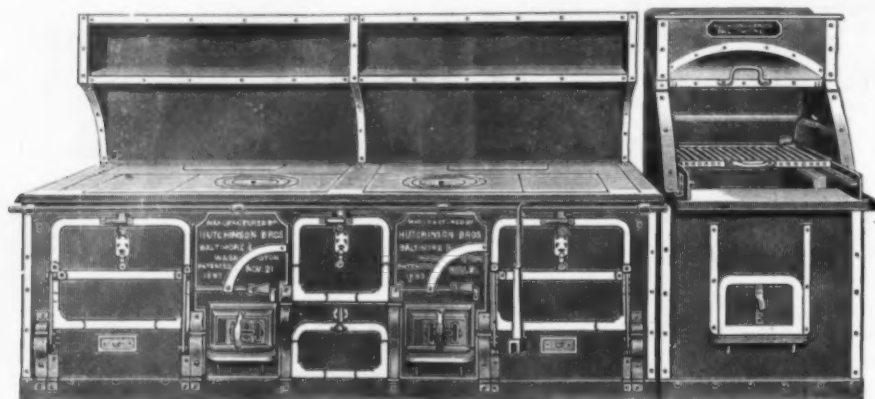
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and General Kitchen Apparatus

For

Hotels, Restaurants and Institutions.

Catalogue upon application. Estimates furnished.

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All the advantages of Hot Water Heating, with none of its objectionable features.

Absolutely no pressure on the radiators. Noiseless. No Air Valves used on radiators.

Radiators can be heated part way or all over, as required to properly heat the room.  
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Can be used with any good steam heating boiler.  
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Smaller pipes required than with any other system.  
Can be installed by any competent steam fitter.  
First cost less than hot water, and will use less fuel than any other system.

This system is now being installed in many prominent buildings in the South, among which are:

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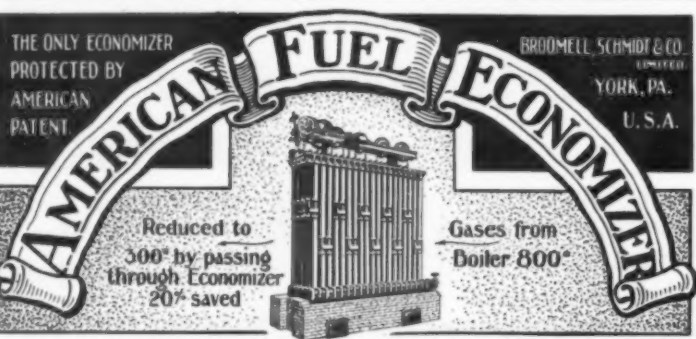
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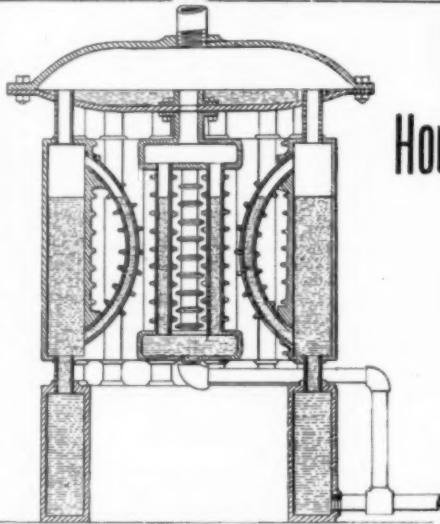
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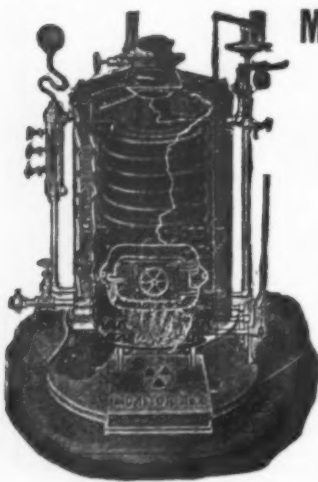
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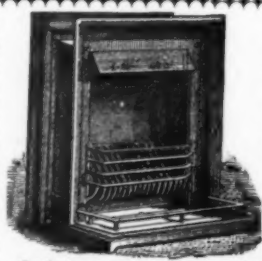
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Lewell Machine Shop, Boston, Mass.  
Mason Machine Works, Taunton, Mass.

**Lubricating Compounds.**

Cook's, Adam, Sons, New York, N. Y.

**Lubricators and Oil Cups.**

Bealy, Chas. H., & Co., Chicago, Ill.  
Cook's Sons, Adam, New York, N. Y.  
Crosby Steam Gauge & Valve Co., Boston, Mass.  
Detroit Lubricator Co., Detroit, Mich.  
Lunkenheimer Co., Cincinnati, O.  
Penberthy Injector Co., Detroit, Mich.

**Lumber and Hardwoods.**

Hallam, W. W., Macon, Ga.  
Wilco Co., The T., Chicago, Ill.  
Machinery. (Winding, Measuring & Folding)  
Philadelphia Textile Specialty Mch. Co., Phila., Pa.

**Machinery. (Special.)**

Alsing Co., J. R., Inc., Brooklyn, N. Y.  
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Heartley Mch., Variety Iron & Tool Works, Toledo, O.  
Leffler, Charles, & Co., Brooklyn, N. Y.  
Philadelphia Textile Specialty Mch. Co., Phila., Pa.  
Roversford Foundry & Machine Co., Roversford, Pa.

**Machinery and Tools. (New and second-hand.)**

American, Chicago, Ill.  
American Elec. Supply & Mfg. Co., New York, N. Y.  
Armstrong, R. S., & Bro., Atlanta, Ga.  
Asher, A., New York, N. Y.  
Baird, U., Machinery Co., Pittsburgh, Pa.  
Baker, H. C., & Co., Philadelphia, Pa.  
Bentley Co., The W. C., Columbus, O.  
Camp Engineering Co., Chicago, Ill.  
Carlin Machinery & Supply Co., Allegheny, Pa.  
Casey, D. L., Mch. Co., Springfield, O.  
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Florida Iron & Wood Works, Apopka, Fla.  
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Jones, J. B., & Co., Allegheny, Pa.  
Kirk, W. W., Baltimore, Md.  
Mallory, J. D., Baltimore, Md.  
McClay Engineering Co., Baltimore, Md.  
McDonald, A. H., Chicago, Ill.  
Mengel Machinery Exchange, Baltimore, Md.  
Miller Mfg. Co., Huntington, W. Va.  
Moore Co., H., Milwaukee, Wis.  
Outfall, J., Philadelphia, Pa.  
Poulter & Co., Philadelphia, Pa.  
Preston Tool & Supply Co., New York, N. Y.  
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Saxton, J. C., New York, N. Y.  
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Winconsin Mch. Co., Milwaukee, Wis.  
Wormer, C. C., Mch. Co., Detroit, Mich.

**Machinists' Supplies.**

Bealy, Chas. H., & Co., Chicago, Ill.

**Mail Chutes.**

Cutler Mfg. Co., Rochester, N. Y.

**Mechanical Draft.**

American Blower Co., Detroit, Mich.  
Boston Blower Co., Hyde Park, Mass.  
Sturtevant Co., B. F., Boston, Mass.

**Mercerizing Machinery.**

Philadelphia Textile Specialty Mch. Co., Phila., Pa.

**Metallic Tubing. (Flexible.)**

Flower, Walter L., & Co., St. Louis, Mo.

**Metal Laths. (Expanded.)**

Associated Expanded Metal Co's of U. S., New York.

**Metal-Working Machinery.**

American Tool Works Co., Cincinnati, O.  
Bertsch & Co., Cambridge City, Ind.  
Bealy & Co., Chas. H., Chicago, Ill.  
Laudis Tool Co., Waynesboro, Pa.  
Niagara Machine & Tool Works, Niagara Falls, N. Y.  
Prest & Whitney Co., Hartford, Conn.  
Robinson & Co., J. M., Cincinnati, O.  
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Wickes Bros., Pittsburgh, Pa.

**Meters. (Water.)**

Pittsburg Meter Co., E. Pittsburg, Pa.

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Bowsher Co., N. F., South Bend, Ind.

**Mill Engineers and Architects.**

Chapman, Wm. A., & Co., Providence, R. I.  
Lockwood, Greene & Co., Boston, Mass.  
Makepeace, C. R., & Co., Providence, R. I.  
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Pray, C. A., M., Co., Providence, R. I.  
Smith Whaley, W. B., & Co., Columbia, S. C.  
Wheeler, McMichael & Co., Charlotte, N. C.

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Higgins, John C., & Son, Chicago, Ill.

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Dehner-Wuerpel Mill Building Co., St. Louis, Mo.  
Dodge Mfg. Co., Milwaukee, Ind.  
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Gibbs, W. H., & Co., Columbia, S. C.  
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Schaefer, W. J., & Co., New York, N. Y.

**Milling Machines.**

American Tool Works Co., Cincinnati, O.

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U. S. Mineral Wool Co., New York, N. Y.

**Mine Locomotives. (See Locomotive B'ldrs.)****Mining Machinery. (Gold, Copper, etc.)**

Bunnell Machinery Co., Chicago, Ill.  
Crescon Co., Gen. V., New York, N. Y.  
General Concentrates Co., New York, N. Y.  
McLanahan-Stone Machine Co., Hollidaysburg, Pa.  
Mecklenburg Iron Works, Charlotte, N. C.  
Northern Electric Manufacturing Co., Madison, O.  
Rogers Boat, Gauge & Drill Works, The John M., Gloucester City, N. J.  
Stanley Electric Manufacturing Co., Pittsfield, Mass.

**Mining Screens. (See Screens.)****Mixing Machinery.**

Alsing Co., J. R., Inc., Brooklyn, N. Y.

Aultman Co., The, Canton, O.

Dunning, W. D., Syracuse, N. Y.

Walker & Elliott, Wilmington, Del.

**Mortar Colors.**

Chattanooga Paint Co., Chattanooga, Tenn.

French, Saml. H., & Co., Philadelphia, Pa.

**Nails. (Wire.)**

Ludlow-Saylor Wire Co., The, St. Louis, Mo.

**Oil.**

Adam Cook's Sons, New York, N. Y.

Bealy, Chas. H., & Co., Chicago, Ill.

Bonar, James, & Co., Pittsburgh, Pa.

Galena Oil Co., Franklin, Pa.

Robinson, Wm. C., & Son, Baltimore, Md.

**Oil-Burning Appliances.**

Petroleum Iron Works Co., Washington, Pa.  
Rockwell Engineering Co., New York, N. Y.

**Oilers.**

Lunkenheimer Co., Cincinnati, O.

**Oiling Systems. (Automatic.)**

Hegrist Lubricator Co., St. Louis, Mo.

**Oilless Bearings.**

North American Metaline Co., Long Island City, N. Y.

**One-Handling Machinery.**

Leschen, A., & Sons Rope Co., St. Louis, Mo.

**Packing.**

Boston Belling Co., Boston, Mass.

Goodell Packing Co., Chicago, Ill.

Jenkins Bros., New York, N. Y.

Johns Mfg. Co., H. W., New York, N. Y.

Keasbey & Mattison Co., Ambler, Pa.

N. J. Car Spring & Rubber Co., Jersey City, N. J.

Pearless Rubber Mfg. Co., New York, N. Y.

Rhoads, J. E., & Sons, Wilmington, Del.

Schaefer, W. J., & Co., New York, N. Y.

Textile Mill Supply Co., Charlotte, N. C.

**Paint. (Cold Water, etc.)**

Bird & Co., J. A., & W., Boston, Mass.

De Ronde, Co., Frank S., New York.

Fairbanks Co., Baltimore, Md.

For, M., Erving, & Co., New York, N. Y.

Muralo Co., New Brighton, Borough of Richmond, N. Y.

Muzzy Bros., Paterson, N. J.

Troy Cold Water Kalsomine Co., Troy, N. Y.

**Paint. (Roofing, etc.)**

Armstrong Mfg. Co., The, Richmond, Va.

Barrett Mfg. Co., Philadelphia, Pa.

Chattanooga Paint Co., Chattanooga, Tenn.

Colonial Paint & Varnish Co., Cleveland, O.

Detroit Graphite Mfg. Co., Detroit, Mich.

Dixon Crucible Co., Joseph, Jersey City, N. J.

Eastern Roofing Co., Jersey City, N. J.

French, Samuel H., & Co., Philadelphia, Pa.

Garfield Oil Co., Cleveland, O.

Johns Mfg. Co., H. W., New York, N. Y.

Standard Paint Co., New York, N. Y.

**Painting Machinery.**

Muralo Co., New Brighton, Borough of Richmond, N. Y.

Sar Brass Works Co., The, Chicago, Ill.

**Paper. (Roofing, Building, Sheathing, etc.)**

Armstrong Mfg. Co., The, Richmond, Va.

Barrett Mfg. Co., Philadelphia, Pa.

Eastern Granite Roofing Co., Jersey City, N. J.

Garrett, C. S., & Son, Philadelphia, Pa.

National Roofing & Supply Co., Louisville, Ky.

Standard Paint Co., The, New York, N. Y.

**Paper. (Sand, Emery.)**

Bader, Adamson & Co., Philadelphia, Pa.

**Parquetry.**

Adams, J. M., Baltimore, Md.

**Patent Attorney.**

Weatherford & Hildebrand, Memphis, Tenn.

**Patterns. (Metal.)**

Gyan, J. J., & Co., Chicago, Ill.

**Paving Materials.**

Charlotte Roofing & Paving Co., Charlotte, N. C.

National Roofing & Supply Co., Louisville, Ky.

Robinson Contracting Co., Geo. A., Mobile, Ala.

Warren-Ehret Co., Philadelphia, Pa.

**Perforated Metal.**

Aitchison Perforated Metal Co., Robert, Chicago, Ill.

Bealy, Chas. H., & Co., Chicago, Ill.

Harrington & King Perforating Co., Chicago, Ill.

Hendrick Mfg. Co., The, Ltd., Carbondale, Pa.

Littleford Bros., Cincinnati, Ohio.

Ludlow-Saylor Wire Co., The, St. Louis, Mo.

Mundt, Charles, & Sons, New York, N. Y.

**Phosphate Machinery.**

Alsing Co., J. R., Inc., Brooklyn, N. Y.

Aultman Co., The, Canton, O.

Bailey-Lebby Co., The, Charleston, S. C.

Bradley Pulverizer Co., Boston, Mass.

Cameron & Barkley Co., Charleston, S. C.

Crescon Co., Geo. V., New York, N. Y.

Foss Mfg. Co., Springfield, O.

Link-Belt Engineering Co., Philadelphia, Pa.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Raymond Bros. Impact Pulverizer Co., Chicago, Ill.

Sackett, A. J., Baltimore, Md.

Valk & Murdoch Iron Works, Charleston, S. C.

Walker & Elliott, Wilmington, Del.

West Pulverizing Machine Co., New York, N. Y.

**Phosphate Screens. (See Screens.)****Phosphor Bronze. (Wire, Rods, Sheets.)**

Ryan, J. J., & Co., Chicago, Ill.

Phosphor Bronze Smelting Co., Ltd., Philadelphia, Pa.

**Pig Iron.**

Alabama Con. Coal & Iron Co., Birmingham, Ala.

**Piling.**

New Orleans Wood Preserving Wks., New Orleans, La.

**Pillow Blocks.**

Dodge Mfg. Co., Milwaukee, Ind.

Crescon Co., Geo. V., New York, N. Y.

Golden's Foundry & Machine Co., Columbus, Ga.

**Pipe. (Cast Iron and Steel.)**

Dimmick Pipe Co., Birmingham, Ala.

General Fire Extinguisher Co., Providence, R. I.

Glanorgan Pipe & Foundry Co., Lynchburg, Va.

U. S. Cast Iron Pipe & Foundry Co., Chattanooga, Tenn.

Wood, B. D., & Co., Philadelphia, Pa.

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Wolf Co., Fred, W., Chicago, Ill.

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Simmons, John, Co., New York, N. Y.

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Pomona Terra Cotta Co., Pomona, N. C.

Stevens' Sons Co., H., Macon, Ga.

Warner Co., Chas., Wilmington, Del.

**Pipe. (Wrought Iron.)**

Davis, The John Co., Chicago, Ill.

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**Pipe. (Unions and Joint.)**

Dart Mfg. Co., E. M., Providence, R. I.

**Pipe Cutting and Threading Mach.**

Columbus Machine Co., Columbus, O.

Saunders' Sons, D., Yonkers, N. Y.

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Wolf Co., Fred, W., Chicago, Ill.

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Atlas Pipe Wrench Co., New York, N. Y.

Williams, J. H., & Co., Brooklyn, N. Y.

**Planers.**

American Tool Works Co., Cincinnati, O.

**Planation Locomotives. (See Locomotive Builders.)****Plaster Ornaments.**

French, Samuel H., & Co., Philadelphia, Pa.

**Plating. (Nickel.)**

Hanson & Van Winkle Co., Newark, N. J.

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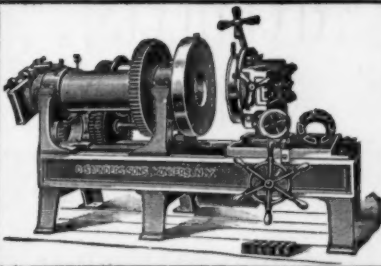
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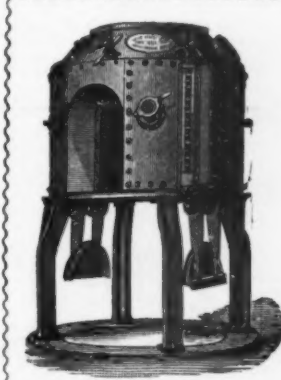
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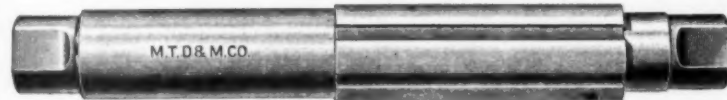
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of Every  
Description.

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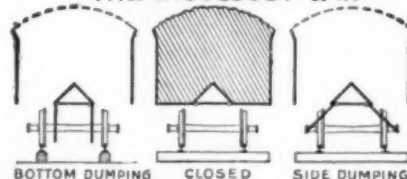
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Hunt Co., C. W., New York, N. Y.  
Link-Belt Engineering Co., Philadelphia, Pa.  
Northern Electric Mfg. Co., Madison, Wis.  
Stanley Electric Mfg. Co., Pittsfield, Mass.  
Wood's, T. B., Sons, Chambersburg, Pa.

## Presses. (Railing, Cottonseed Oil etc., Hydraulic and Power.)

Boomer & Boechert Press Co., Syracuse, N. Y.  
Bushnell Press Co., G. H., Thompsonville, Conn.  
Cardwell Machine Co., Richmond, Va.  
Correll, J. B. & J. M., New York, N. Y.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Watson-Stullman Co., New York, N. Y.

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Niagara Machine & Tool Works, Buffalo, N. Y.

## Pulleys. (Friction Clutch.)

Cresson Co., Geo. V., New York, N. Y.  
Dodge Mfg. Co., Mishawaka, Ind.  
Fairmount Machine Co., Philadelphia, Pa.  
Morgan Smith Co., S. York, Pa.  
Whitman Mfg. Co., New York, N. Y.  
Williams, Milton F., & Co., St. Louis, Mo.  
Wood's, T. B., Sons, Chambersburg, Pa.

## Pulleys. (Wood Split.)

Davis, F. H., & Co., Boston, Mass.  
Dawson, A. L., & Co., Chicago, Ill.  
Dodge Mfg. Co., Mishawaka, Ind.  
Schold's Sons, Wm., Philadelphia, Pa.  
Fairbanks Co., Baltimore, Md.  
Gurney Mfg. Co., Roan Mountain, Tenn.  
Ohio Pulley Co., Marion, O.  
Saginaw Mfg. Co., Saginaw, Mich.

## Pulley. (Pneumatic.)

Williams, Milton F., &amp; Co., St. Louis, Mo.

## Pulleys, Shafting and Hangers.

Caldwell, H. W., & Son Co., Chicago, Ill.  
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Finished Steel Co., The, Youngstown, O.  
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Greenwald Co., I. & E., Cincinnati, O.  
Jeffrey Mfg. Co., The, Columbus, O.  
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Maryland Foundry & Machine Co., Baltimore, Md.  
Morgan Smith Co., S. York, Pa.  
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Schold's, J. S., Sons Co., Macon, Ga.  
Stillwell-Bierce & Smith-Valle Co., Dayton, O.  
Textile Mill Supply Co., Charlotte, N. C.  
Valley Iron Works, Williamsport, Pa.  
Wickes Bros., Pittsburg, Pa.  
Wolf Co., Chambersburg, Pa.  
Wood's, T. B., Sons, Chambersburg, Pa.

## Pumps. (Pneumatic.)

Bacon Air Lift Co., New York, N. Y.  
Ingersoll-Sergeant Drill Co., New York, N. Y.

## Pumps. (Centrifugal.)

Southwark Foundry & Machine Co., Philadelphia, Pa.  
Wood & Co., R. D., Philadelphia, Pa.

## Pumps. (Power Boiler-Feed.)

Cameron Steam Pump Works, A. S., New York, N. Y.  
McGowan Co., John H., Cincinnati, O.  
Park Mfg. Co., Charlotte, N. C.  
Watson, N. A., Erie, Pa.

## Pumps. (Steam.)

Cameron Steam Pump Works, A. S., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Cook Well Co., St. Louis, Mo.  
Dean Bros. Steam Pump Works, Indianapolis, Ind.  
Downie Pump Co., Downieville, Pa.  
Gardner Governor Co., Quincy, Ill.  
Mason Regulator Co., Boston, Mass.  
McGowan, John H., & Co., Cincinnati, O.  
Pulsometer Steam Pump Co., New York, N. Y.  
Stillwell-Bierce & Smith-Valle Co., Dayton, O.  
Sydney Pump & Well Co., Richmond, Va.  
Textile Mill Supply Co., Charlotte, N. C.  
Watson-Stullman Co., New York, N. Y.  
Wickes Bros., Pittsburg, Pa.

## Pumps. (Trench.)

Edson Manufacturing Co., Boston, Mass.  
Union Elevator & Machine Co., Chicago, Ill.

## Pumping Machinery.

Bacon Air Lift Co., New York, N. Y.  
Cook Well Co., The, St. Louis, Mo.  
Dean Bros., Indianapolis, Ind.  
Downie Pump Co., Downieville, Pa.  
Dyer, F. E., & Bro., Ashland, O.  
Stillwell-Bierce & Smith-Valle Co., Dayton, O.  
Wood, R. D., & Co., Phila., Pa.

## Pump Governor.

Gardner Governor Co., Quincy, Ill.  
Mason Regulator Co., Boston, Mass.

## Punching and Shearing Machinery.

American Tool Works Co., Cincinnati, O.  
Bertsch & Co., Cambridge City, Ind.  
Hartley Mch., Variety Iron & Tool Works, Toledo, O.  
Long & Alistair Co., Hamilton, O.  
Niagara Machine & Tool Works, Buffalo, N. Y.  
Rosen, J. M., & Co., Cincinnati, O.  
Ryersford Foundry & Machine Co., Ryersford, Pa.  
Wood, R. D., & Co., Phila., Pa.

## Quarry and Stonecutting Machinery.

Ingersoll-Sergeant Drill Co., New York, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Rand Drill Co., New York, N. Y.  
Sullivan Machinery Co., Chicago, Ill.

## Rail Locomotives. (See Locomotive Bldrs.)

## Railroad Equipment and Supplies.

(New and Second-hand.)  
Bailley-Libby Co., The, Charleston, S. C.  
Benjamin Iron & Steel Co., Buffalo, N. Y.  
Birmingham Rail & Locomotive Co., Birmingham, Ala.  
Conard, Thos. F., Philadelphia, Pa.  
Cox Jr., Justus, & Co., Ltd., Philadelphia, Pa.  
Dallitt & Co., Philadelphia, Pa.  
Fairbanks Co., Baltimore, Md.  
Fitz-Hugh & Co., Chicago, Ill.  
Grant & Williams, New York, N. Y.  
Hyde Bros. & Co., Pittsburg, Pa.  
Johns Mfg. Co., S. W., New York, N. Y.  
Jones, J. B., & Co., Allegheny, Pa.  
Joseph Iron Co., Isaac, Cincinnati, O.  
Kilby Locomotive & Machine Works, Anniston, Ala.  
Malee Co., Cincinnati, O.  
Miller Supply Co., Huntington, W. Va.  
May & Spaulding, Atlanta, Ga.  
New York Equipment Co., New York, N. Y.  
Pittsburg Locomotive & Car Works Co., Pittsburg, Pa.  
Porter Co., H. K., Pittsburg, Pa.  
Poulter & Co., Philadelphia, Pa.  
Robinson & Orr, Pittsburg, Pa.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Watson, Benj., New York, N. Y.  
Weir Frog Co., Cincinnati, O.  
Zelicker, W. A., St. Louis, Mo.

## Rails. (Steel.)

Malee Co., Cincinnati, O.  
Steel Rail Supply Co., The, New York, N. Y.

## Reamers.

Brubaker, W. L., & Bros., Millersburg, Pa.  
Morse Twist Drill & Machine Co., New Bedford, Mass.  
Prait & Whitney Co., Hartford, Conn.  
Polk, A. J., & Son, Millersburg, Pa.

## Refrigerating Plants. (See Ice-making Machinery.)

## Regulators. (Water &amp; Steam Pressure.)

Crosby Steam Gauge & Valve Co., Boston, Mass.  
Mason Regulator Co., Boston, Mass.

## Regulators. (Dampers.)

Mason Regulator Co., Boston, Mass.

## Rivets. (Lead.)

Simpson, Edwin B., &amp; Son, New York, N. Y.

## Rock Crushers.

Aultman Co., The, Canton, O.  
Austin Mfg. Co., F. C., Harvey, Ill.  
Bunnell Machinery Co., Chicago, Ill.  
Cresson Co., Geo. V., New York, N. Y.  
N. J. Foundry & Machine Co., Plainfield, N. J.

## Roof Machinery.

Aultman Co., The, Canton, O.  
Austin Mfg. Co., F. C., Harvey, Ill.  
Bunnell Machinery Co., Chicago, Ill.  
Kelly Co., O. S., Springfield, O.  
Kilbourne & Jacobs Mfg. Co., Columbus, O.

## Roofing.

(Felt, Tar, Asphalt, Paper, etc.)  
Armstrong Mfg. Co., The, Richmond, Va.  
Asphalt Ready Roofing Co., New York, N. Y.  
Barrett Mfg. Co., Philadelphia, Pa.  
Charlotte Roof & Paving Co., Charlotte, N. C.  
Eastern Granite Roofing Co., Jersey City, N. J.  
Jarrett, C. B., & Son, Philadelphia, Pa.  
Johns Mfg. Co., H. W., New York, N. Y.  
National Roofing & Supply Co., Louisville, Ky.  
Robinson Contracting Co., Geo. A., Mobile, Ala.  
Standard Paint Co., New York, N. Y.  
Stewart Mfg. Co., Jersey City, N. J.  
Warren Chemical & Mfg. Co., New York, N. Y.  
Warren-Ehret Co., Philadelphia, Pa.

## Roofing and Siding. (Metal.)

American Bridge Co., New York, N. Y.  
Bartlett, Hayward & Co., Baltimore, Md.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Downman Mfg. Co., Atlanta, Ga.  
Merchant & Co., Philadelphia, Pa.  
Scaife, Wm. B., & Son, Pittsburg, Pa.  
Virginia Bridge & Iron Co., Roanoke, Va.

## Roofing and Siding. (See Roofing.)

## Roofing. (Metal Shingles.)

Cortright Metal Roofing Co., Philadelphia, Pa.  
Merchant & Co., Inc., Philadelphia, Pa.  
Monroe Metal Shingle Co., Camden, N. J.

## Roofs. (Steel.)

Downman Mfg. Co., Atlanta, Ga.  
Galt, John, & Sons, New York, N. Y.  
Hennrich Bangor Slate Co., Easton, Pa.  
McKenna, David, Slatington, Pa.  
Williams, J. B., & Co., Arvonia, Va.

## Roofers' and Tinners' Supplies.

Niagara Machine & Tool Works, Buffalo, N. Y.  
Merchant & Co., Inc., Philadelphia, Pa.  
Robinson, J. M., & Co., Cincinnati, O.

## Rope. (Transmission.)

American Mfg. Co., The, New York, N. Y.  
Carpenter & Co., George B., Chicago, Ill.  
Cresson Co., Geo. V., New York, N. Y.  
Dodge Mfg. Co., Mishawaka, Ind.  
Hunt Co., C. W., West New Brighton, N. Y.  
Leschen, A., & Sons Rope Co., St. Louis, Mo.  
Link-Belt Engineering Co., Philadelphia, Pa.  
Macomber & Whyte Rope Co., Chicago, Ill.  
Morgan Smith Co., S. York, Pa.  
Robinson Machine Co., Monongahela, Pa.  
Tate, Jones & Co., Pittsburg, Pa.  
Wood's Sons, T. B., Chambersburg, Pa.

## Rubber Tires. (Vehicle, Automobile, etc.)

Rubber Tire Co., Philadelphia, Pa.

## Rubber Goods.

Boston Belting Co., Boston, Mass.  
Eureka Fire Hose Co., New York, N. Y.  
New Jersey Car Spring & Rubber Co., Jersey City, N. J.  
Rhoads, J. E., & Sons, Wilmington, Del.

## Sacks. (Fertilizer, etc.)

Bailey, John T., &amp; Co., Philadelphia, Pa.

## Safety Water Columns and Gauges.

American Steam Gauge Co., Jamaica Plain, Mass.  
Clark Bros. Co., Vicksburg, Mich.  
Crosby Steam Gauge & Valve Co., Boston, Mass.  
Davis, The John Co., Chicago, Ill.  
Lunkenheimer Co., Cincinnati, O.  
Reliance Gauge Column Co., Cleveland, O.  
Wright Mfg. Co., Detroit, Mich.

## Saws. (See Woodworking Machinery.)

Atkins, E. C., & Co., Indianapolis, Ind.  
Barney Co., W. F., & John, Rockford, Ill.  
Huther Bros., Rochester, N. Y.

## Saw-Mill Machinery.

Alabama Iron Works, Mobile, Ala.  
Bailley-Libby Co., The, Charleston, S. C.  
Beach, H. W., Montrose, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
DuBois Iron Works, DuBois, Pa.  
DeLoach Mill Mfg. Co., Atlanta, Ga.  
Egan Co., The, Cincinnati, O.  
Farquhar Co., A. E., Ltd., York, Pa.  
Fay, J. A., & Co., Cincinnati, O.  
Florida Iron & Wood Works, Apopka, Fla.  
Frick Co., Wayne, Pa.  
Hench & Drongold, York, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Mecklenburg Iron Works, Charlotte, N. C.  
Salem Iron Works, Salem, N. C.  
Sanders Mfg. Co., Dalton, Ga.  
Schold's, J. S., Sons Co., Macon, Ga.  
Soule Steam Feed Works, Meridian, Miss.  
Southern Eng. & Boiler Works, Jackson, Tenn.  
Union Iron Works Co., Selma, Ala.  
Wickes Bros., Pittsburg, Pa.

## Saw Sharpeners and Files. (Cotton Gin.)

Carver Cotton Gin Co., East Bridgewater, Mass.

## Scales. (Railroad, etc.)

Fairbanks Co., Baltimore, Md.  
Standard Scale & Supply Co., Ltd., Pittsburg, Pa.

## Schools and Colleges.

International Correspondence Schools, Scranton, Pa.

## Screens. (Fly, Window and Door.)

Burrows Co., E. T., Portland, Me.  
New Jersey Wire Cloth Co., Trenton, N. J.

## Screens. (Ore, Coke, etc.)

Aultman Co., The, Canton, O.  
Cresson Co., Geo. V., New York, N. Y.  
Harrington & King Perforating Co., Chicago, Ill.  
Hendrick Mfg. Co., Ltd., Carbondale, Pa.  
Jeffrey Mfg. Co., The, Columbus, O.

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Ludlow-Saylor Wire Co., The, St. Louis, Mo.  
New Jersey Wire Cloth Co., Trenton, N. J.  
Myers Mfg. Co., Fred J., Hamilton, O.  
Mundt & Sons, Charles, New York, N. Y.  
McLanahan-Rose Machine Co., Hollidaysburg, Pa.

## Screws. (Machine and Wood.)

Miles, Franklin S., Philadelphia, Pa.

## Screw Plates.

Brubaker, W. L., & Bros., Millersburg, Pa.  
Polk, A. J., & Son, Millersburg, Pa.

## Screw Saws. (See Woodworking Mch.)

Barnes Co., W. F., & John, Rockford, Ill.  
Egan Co., The, Cincinnati, O.

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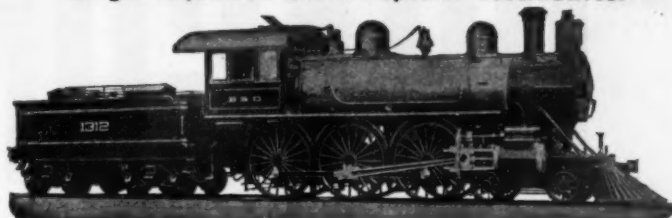
Bower &amp; Co., S. F., Ft. Wayne, Ind.

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ANNUAL CAPACITY 1,200.

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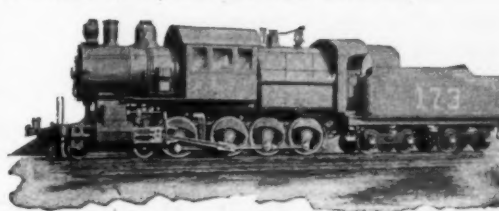
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Dickson Locomotive Works,

Manchester Locomotive Works,

Paterson, N. J.

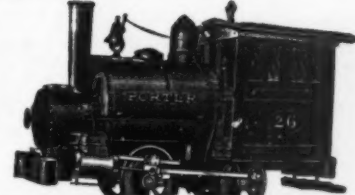
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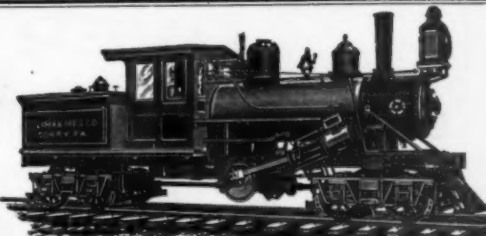
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York Mf

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## Classified Index of Advertisers. For ALPHABETICAL INDEX See Page 39.

**Separators.** (Dust.)  
Allington & Curtis Mfg. Co., Saginaw, Mich.  
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.  
Sturtevant Co., B. F., Boston, Mass.

**Separators.** (Steam and Oil.)  
American Tool Works Co., Cincinnati, O.  
Austin Separator Co., Detroit, Mich.  
Bonar, James, & Co., Pittsburg, Pa.  
Harrison Safety Boiler Works, Philadelphia, Pa.  
Webster Warren & Co., Philadelphia, Pa.

**Shapers.**  
American Tool Works Co., Cincinnati, O.

**Sheet-Metal-Working Machinery.**  
(See Metal-Working Machinery.)

**Sheet Steel and Iron.**  
American Sheet Steel Co., New York, N. Y.

**Shingle, Lath and Stave Machinery.**  
(See Woodworking Machinery.)

Lane Mfg. Co., Montpelier, Vt.  
Trevor Mfg. Co., Lockport, N. Y.

**Ship Builders.** (Iron and Steel)  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

**Skylights.**  
Badger, E. B., & Sons Co., Boston, Mass.  
Dowman Mfg. Co., Atlanta, Ga.  
Merchant & Co., Inc., Philadelphia, Pa.  
National Skylight & Construction Co., New York, N. Y.  
Noorden Co., E. Van, Boston, Mass.

**Slate.** (Roofing and Blackboard.)  
Galt, John, & Sons, New York, N. Y.  
Genuine Bangor Slate Co., Easton, Pa.  
David McKenna, Slatington, Pa.  
Williams, J. R., & Co., Arvon, Va.

**Slaters' Tools.**  
Galt, John, & Sons, New York, N. Y.

**Smoke Stacks.** (Iron and Steel.)  
Hammond Iron Works, Warren, Pa.  
Keeler, E., Co., Williamsport, Pa.  
Littleford Bros., Cincinnati, Ohio.  
Schonfeld, J. S., Sons Co., Macon, Ga.  
York Mfg. Co., York, Pa.

**Soapmakers' and Butchers' Mch.**  
Dopp, H. Wm., & Son, Buffalo, N. Y.

**Solder.**  
Hiers, Theo., & Son, St. Louis, Mo.  
Ryan, J. J., & Co., Chicago, Ill.

**Speaking Tubes.**  
Bealy, Chas. H., & Co., Chicago, Ill.

**Spring.** (Bicycle Saddle, Machinery, Railway and Spiral.)  
Bealy, Chas. H., & Co., Chicago, Ill.  
Boston Belting Co., Boston, Mass.  
Cary Spring Works, New York, N. Y.  
French Spring Co., A., Pittsburg, Pa.  
Latrobe Steel & Coupler Co., Philadelphia, Pa.  
Ludlow-Saylor Wire Co., The, St. Louis, Mo.

**Spelter.**  
Hiers, Theo., & Son, St. Louis, Mo.

**Sprinklers.** (Automatic.) [See Fire Extinguishers.]

**Stairways.** (Iron.)  
Lykes, John D., Birmingham, Ala.

**Stamp Mills.**  
Meeklenburg Iron Works, Charlotte, N. C.

**Standpipes.**  
Birmingham Boiler Works, Birmingham, Ala.  
Harley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Means & Fulton Iron Works, Birmingham, Ala.  
Virginia Bridge & Iron Co., Roanoke, Va.  
York Mfg. Co., York, Pa.

**Steam Gages.**  
Crosby St. Gage & Valve Co., Boston, Mass.  
Lunkenheimer Co., Cincinnati, O.

**Steam Fitters and Supplies.**  
General Fire Extinguisher Co., Providence, R. I.

**Steam Heating.**  
General Fire Extinguisher Co., Providence, R. I.  
Keeler Co., E., Williamsport, Pa.  
Peck-Hammond Co., The, Cincinnati, O.  
Warren Webster & Co., Camden, N. J.

**Steam Shovels.** [See Dredges and Excavators.]

**Steam Traps.**  
American Blower Co., Detroit, Mich.  
Bonar, James, & Co., Pittsburg, Pa.  
Davis, The John Co., Chicago, Ill.  
Eureka Iron Co., Chicago, Ill.  
Haines Co., W. & S., Philadelphia, Pa.  
Mason Regulator Co., Boston, Mass.  
Sturtevant Co., B. F., Boston, Mass.  
Wright Mfg. Co., Detroit, Mich.

**Steamship Lines.**  
Atlantic Transport Co., Baltimore, Md.  
Bay Line, Baltimore, Md.  
Merchants & Miners' Trans. Co., Baltimore, Md.  
Richmond & York River Line, Baltimore, Md.

**Steel.** (Manufacturers of.)  
Acme Steel & Malleable Iron Works, Buffalo, N. Y.  
American Sheet Steel Co., New York, N. Y.  
Chester Steel Castings Co., Philadelphia, Pa.  
Latrobe Steel Co., Philadelphia, Pa.

**Steel Couplers.** (Automatic.)  
Latrobe Steel & Coupler Co., Philadelphia, Pa.

**Steel Hoops, Bands.**  
American Steel Hoop Co., New York, N. Y.

**Steel Rods.** (Polished.)  
Finished Steel Co., The, Youngstown, O.

**Stokers.** (Mechanical.)  
Westinghouse Machine Co., Pittsburg, Pa.

**Stoves, Ranges, etc.**  
Hutchinson Bros., Baltimore, Md.

**Street Lamps.**  
Dietz Co., R. E., New York, N. Y.

**Structural Steel and Iron.**  
American Bridge Co., New York, N. Y.  
American Steel Hoop Co., New York, N. Y.  
Bartlett, Hayward & Co., Baltimore, Md.  
Belmont Iron Works, Philadelphia, Pa.  
Columbia Bridge Co., Pittsburg, Pa.  
Girard Boiler & Mfg. Co., Girard, O.  
Morrison & Kindervater, Richmond, Va.  
National Skylight & Construction Co., New York, N. Y.  
Scalfe, Wm. B., & Sons, Pittsburg, Pa.  
Schreiber L. & Sons Co., The, Cincinnati, O.  
Virginia Bridge & Iron Co., Roanoke, Va.

**Studs, Nuts.**  
Hoopes & Townsend Co., Philadelphia, Pa.  
Miles, Franklin S., Philadelphia, Pa.  
Milton Mfg. Co., Milton, Pa.

**Sugar-Mill Machinery.**  
Morris, Henry G., Philadelphia, Pa.  
Wolf Co., Fred. W., Chicago, Ill.

**Switchboards, Switches, etc.**  
General Incandescent Arc Light Co., New York, N. Y.  
Smith, Sam'l J., & Co., Charlotte, N. C.  
Western Electrical Supply Co., St. Louis, Mo.  
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.

**Tanks.** (Iron and Steel.)  
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Birmingham Boiler Works, Birmingham, Ala.  
Caldwell, Co. W. E., Louisville, Ky.  
Clarendon Boiler Works, N. Clarendon, Pa.  
Gem City Boiler Co., Dayton, O.  
Girard Boiler & Mfg. Co., Girard, O.

Harry Brothers Co., Dallas, Tex.  
Harley Boiler Works, Montgomery, Ala.  
Hazelton Boiler Co., New York, N. Y.  
Keeler Co., E., Williamsport, Pa.  
Lombard Iron Works & Supply Co., Augusta, Ga.  
Littleford Bros., Cincinnati, O.  
Means & Fulton Iron Works, Birmingham, Ala.  
Petroleum Iron Works Co., Washington, Pa.  
Scalfe, Wm. B., & Sons, Pittsburg, Pa.  
Smith Co., S. Morgan, York, Pa.  
Valik & Murdoch Iron Works, Charleston, S. C.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Wolf Co., Fred. W., Chicago, Ill.  
Wood, R. D., & Co., Philadelphia, Pa.  
York Mfg. Co., York, Pa.

**Tanks.** (Wood.)  
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Cypress Lumber Co., Apalachicola, Fla.  
Davis, G. M., & Son, Palatka, Fla.  
Flint & Walling Mfg. Co., Kendallville, Ind.  
Lewis, H. F., & Co., Ltd., New Orleans, La.  
Woodford Wood Tank Mfg. Co., G., Philadelphia, Pa.

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Bunnell, J. H., & Co., New York, N. Y.  
Chesapeake Electric Co., Baltimore, Md.  
Western Electrical Supply Co., St. Louis, Mo.

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Bunnell, J. H., & Co., New York, N. Y.

**Telephone Poles.**  
New Orleans Wood Preserving Wks., New Orleans, La.  
Tennessee Lumber Co., Lewisburg, Tenn.

**Terne Plate.**  
Merchant & Co., Inc., Philadelphia, Pa.

**Terra Cotta.**  
Pomona Terra Cotta Co., Pomona, N. C.  
Warner Co., Charles, Wilmington, Del.

**Textile Machinery** [See Cotton Mill Mach.]

**Timplate.**  
Merchant & Co., Inc., Philadelphia, Pa.

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Williams, J. H., & Co., Brooklyn, N. Y.

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**Tools.** (Tinner's.)  
Niagara Machine & Tool Works, Buffalo, N. Y.

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Old Dominion Land Co., Newport News, Va.  
Wheeling Board of Trade, Wheeling, W. Va.

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Hunt Co., C. W., New York, N. Y.  
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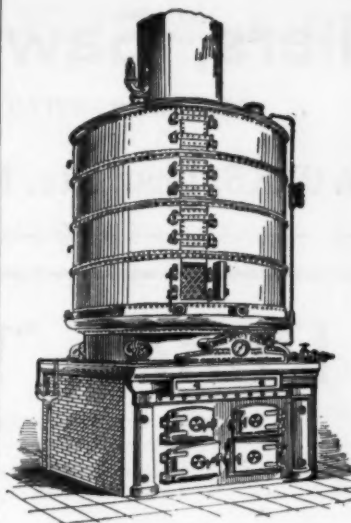
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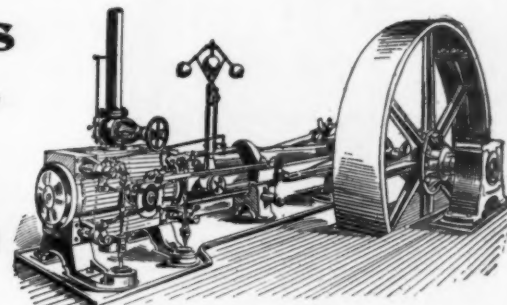
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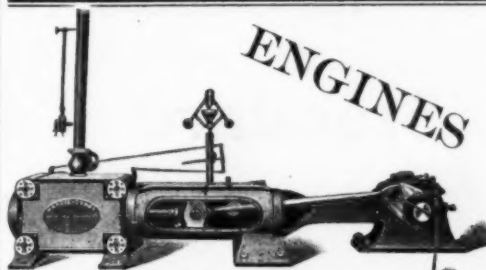
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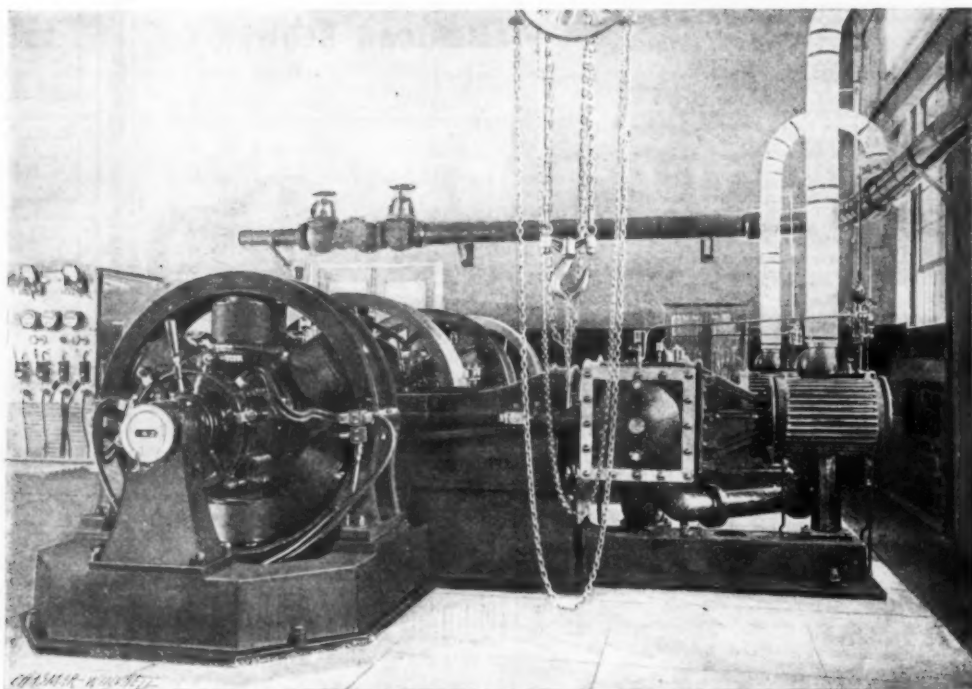




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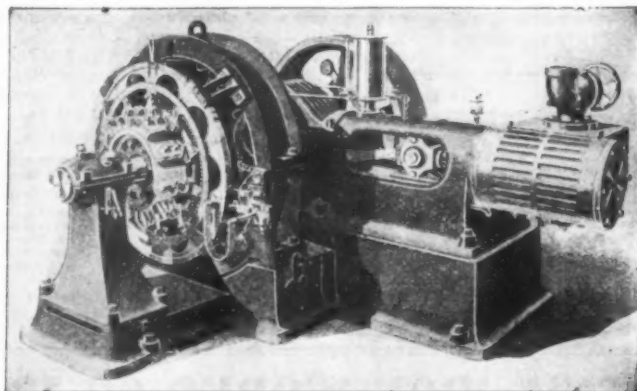


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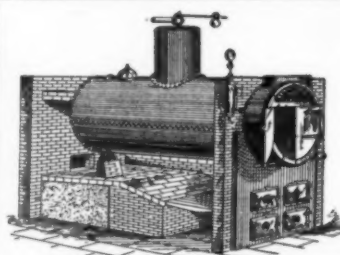
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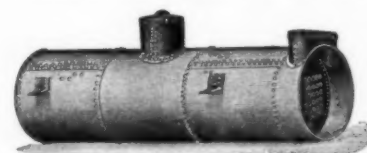


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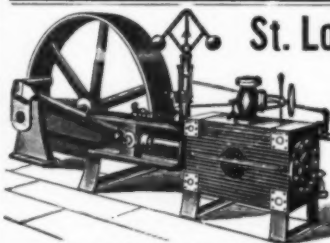
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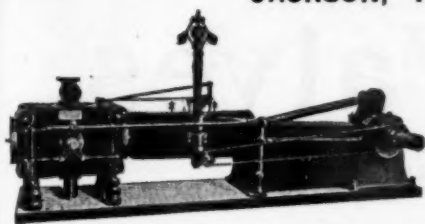
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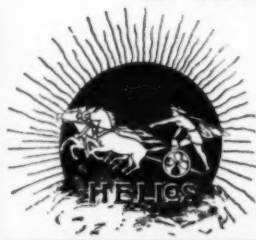
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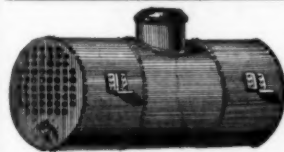
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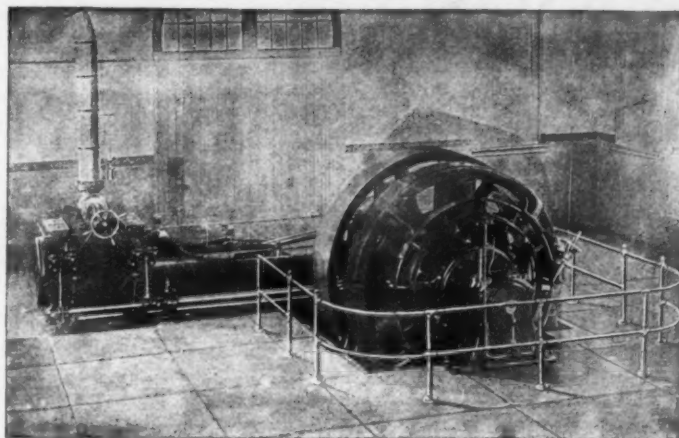
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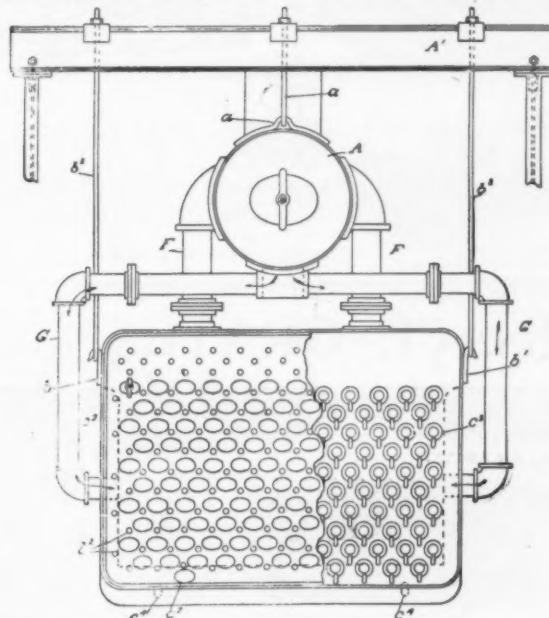
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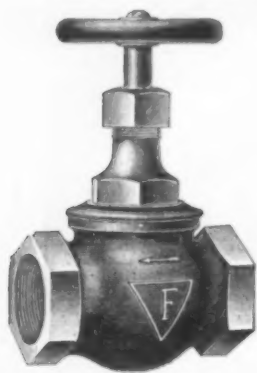
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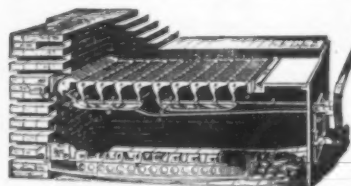
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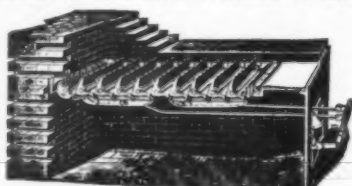
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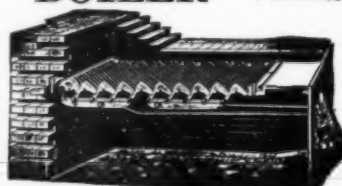
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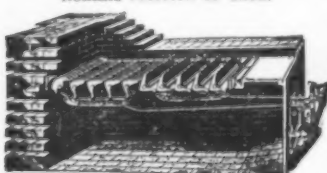
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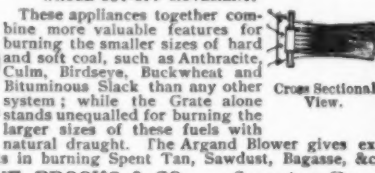
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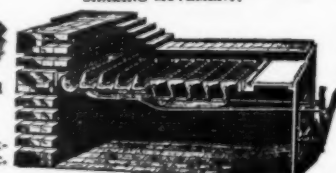
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Cross Sectional View.



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These appliances together combine more valuable features for burning the smaller sizes of hard and soft coal, such as Anthracite, Culm, Birdseye, Buckwheat and Bituminous Slack than any other system; while the Grate alone stands unequalled for burning the larger sizes of these fuels with natural draught. The Argand Blower gives excellent results in burning Spent Tan, Sawdust, Bagasse, &c.

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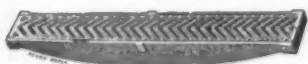
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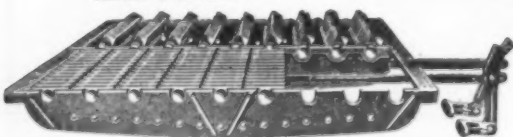
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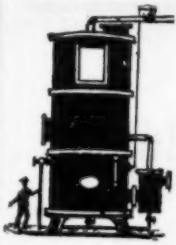
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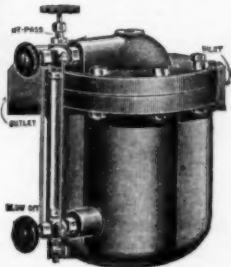
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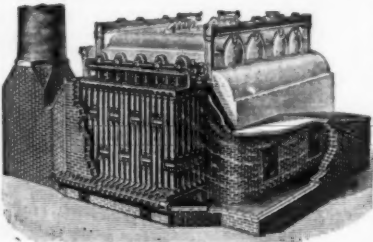
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a trap which will dispose of an unusual inflow of water instantly, and waste no steam. Mechanical perfection. Let us send you full particulars.

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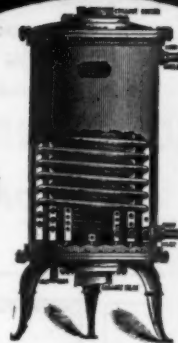
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It delivers water to the boiler at 210° F.  
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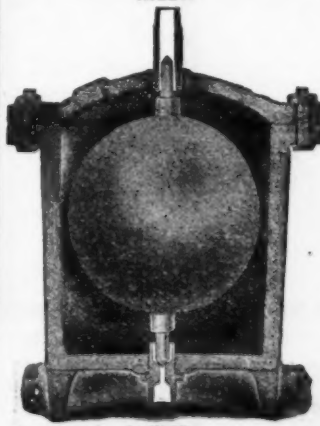
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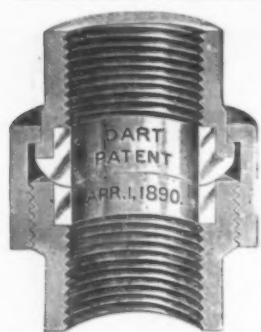
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This heater is designed with special reference to obtaining highest results and greatest durability. All materials are of a quality and weight to successfully withstand years of usage, and workmanship is of the highest grade.

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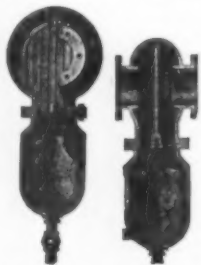




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*They've made a great record, have these "COCHRANES." Thousands of them in use in live steam mains, and thousands in exhaust steam mains—these latter protecting something like 4,000,000 H. P. of boilers at the present time.*

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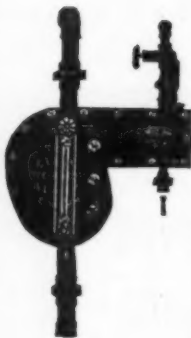
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Do NOT LEAK.  
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A Boiler Feed Regulator, a Low  
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## AUSTIN SEPARATORS.

The kind that eliminate  
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We ship to responsible  
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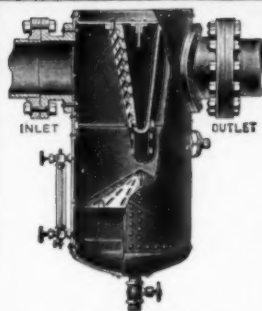


Fig. D, Horizontal.

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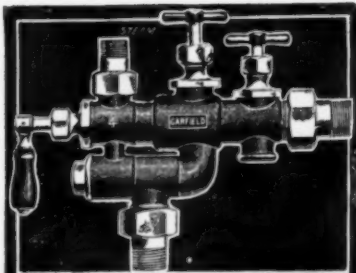
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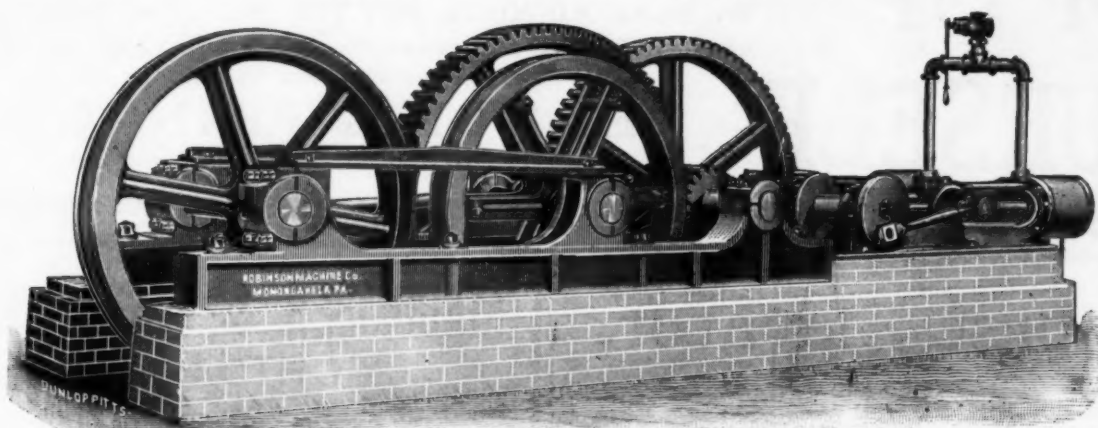
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Built with especial regard to the severe duty required of haulage machinery. It consists of a pair of small engines, geared with compound gearing into two grooved drums, the object of the compound gearing being two fold. 1st, to slow the rope to its proper running speed; 2nd, to secure greater power from a small pair of engines. All shafts run in Babbitt metal boxes, which are part of the frame castings which support the entire machine. The advantages of this system of haulage are:

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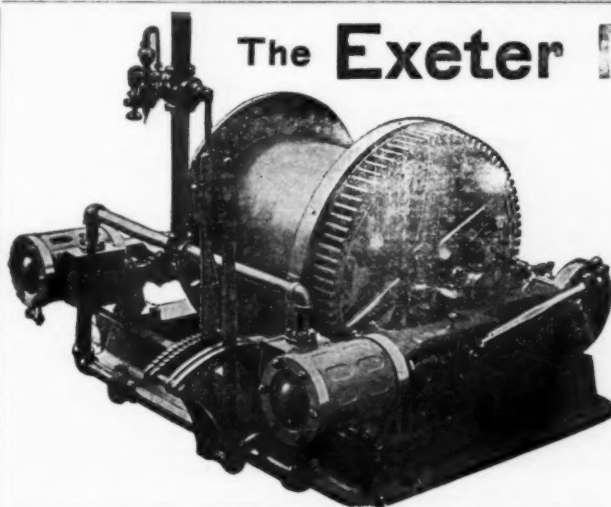
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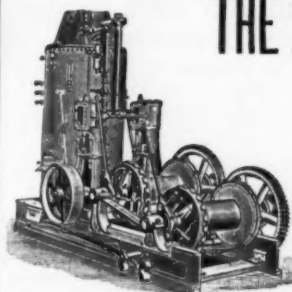
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FOR ALL PURPOSES.

QUALITY THE BEST.

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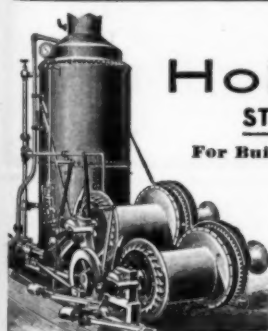
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ARE THE BEST MADE  
We ship F. O. B. Chicago, in shape to be installed by any handy mechanic  
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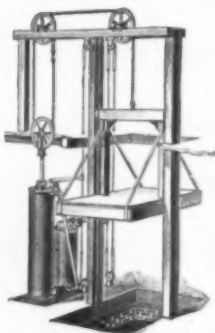
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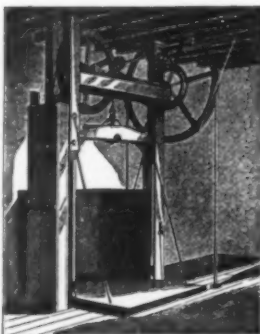
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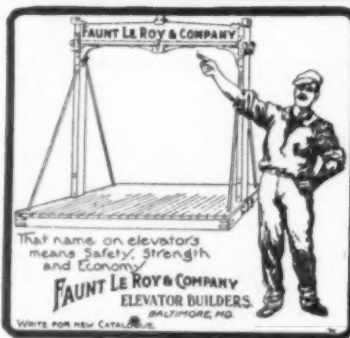
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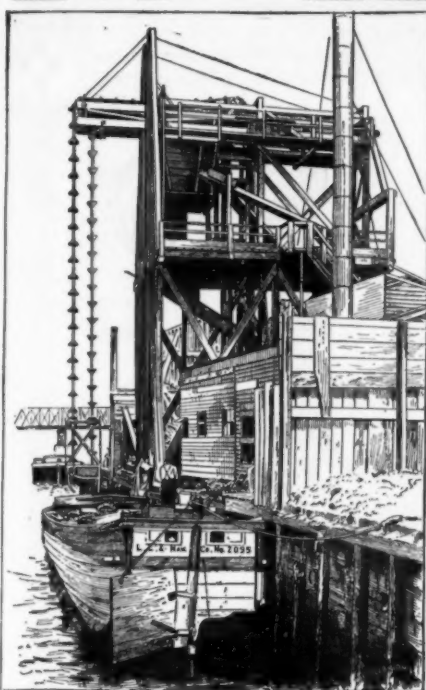
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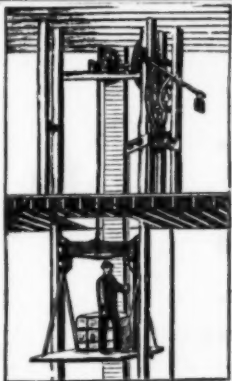
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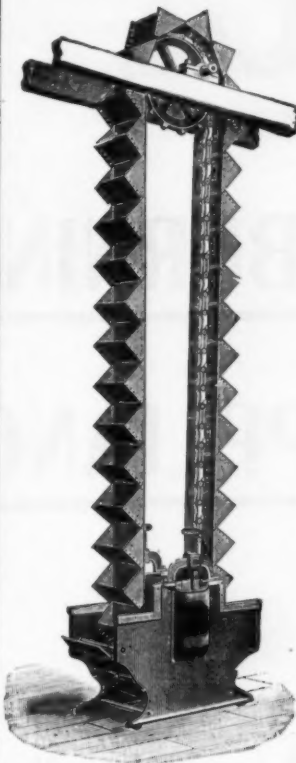
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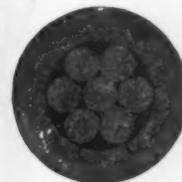
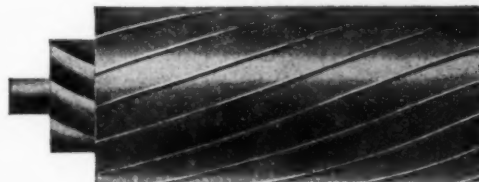
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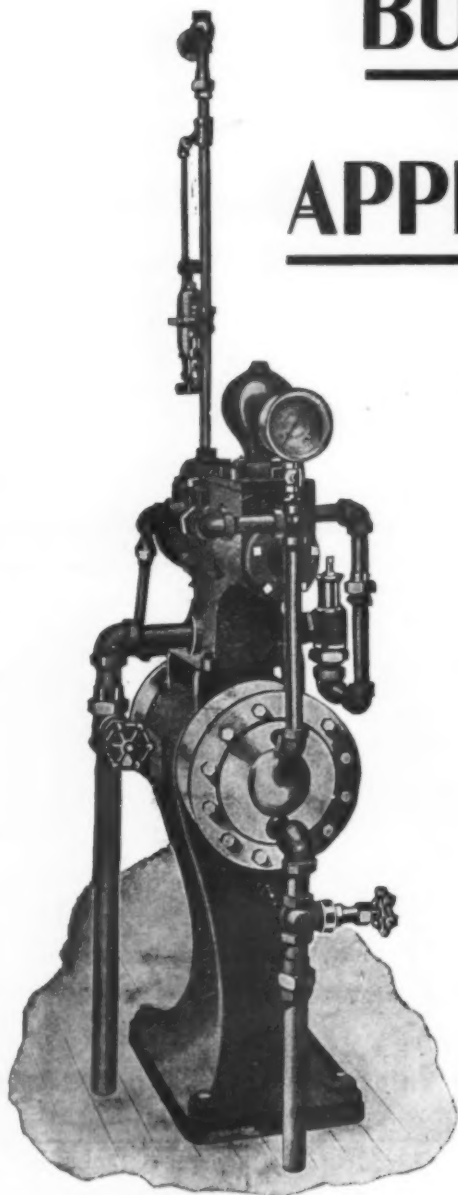
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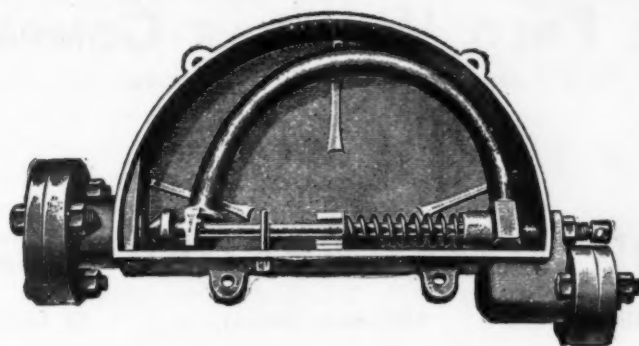
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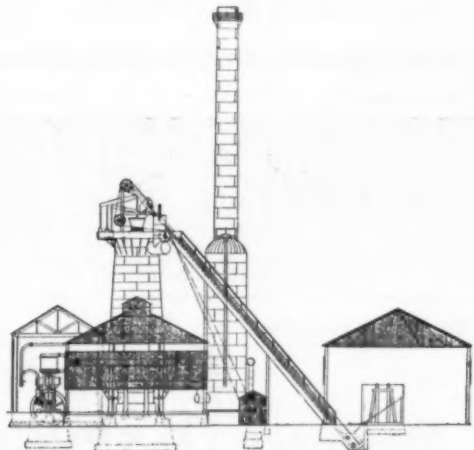
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Low First Cost. Economical in Operation.  
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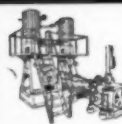
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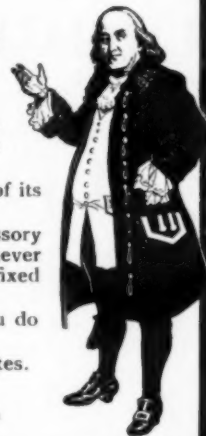
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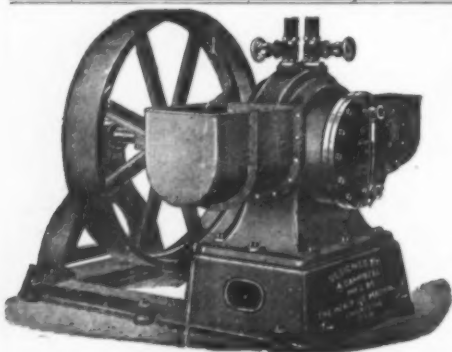
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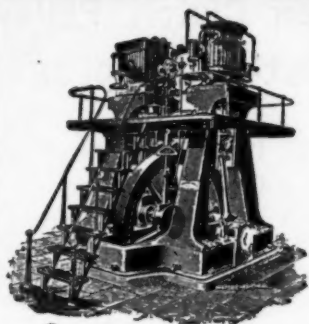
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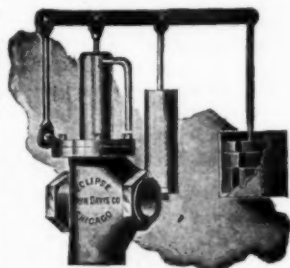
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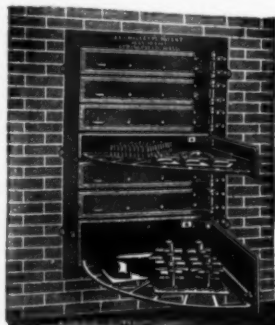
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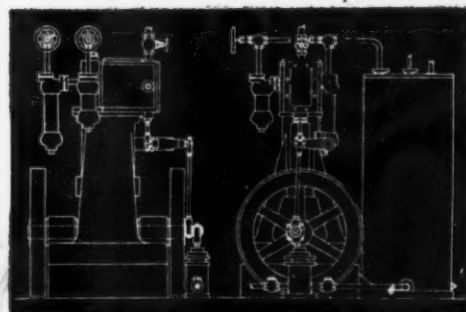
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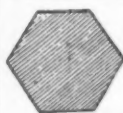
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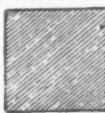
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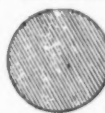
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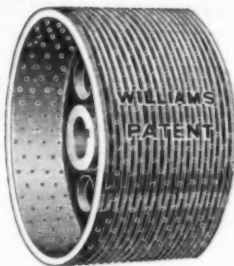


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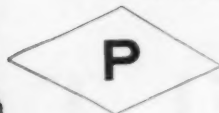
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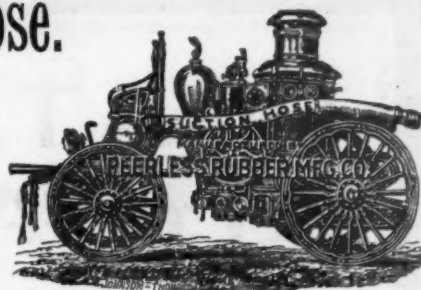
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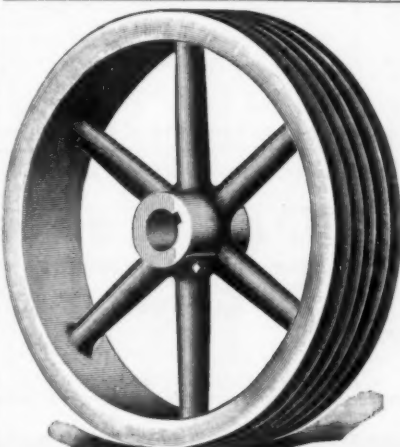
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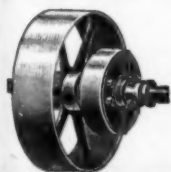
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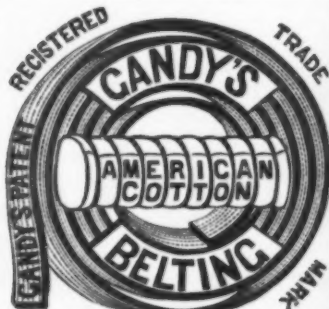
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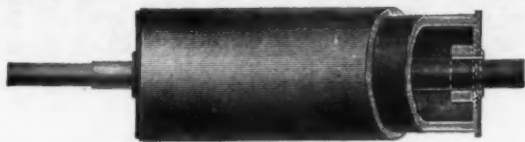
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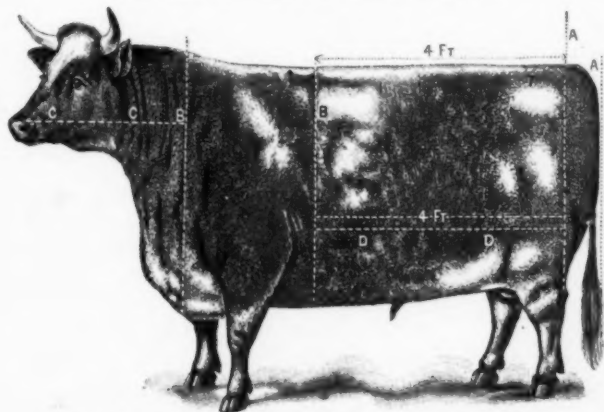


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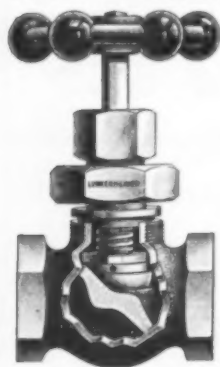
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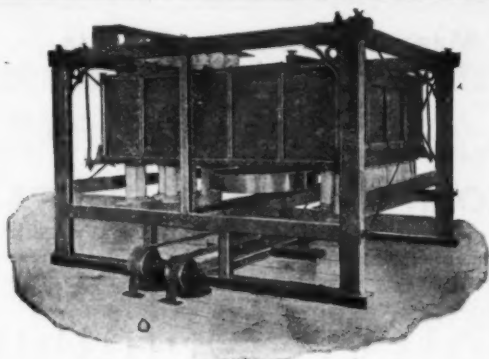
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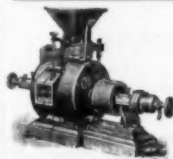
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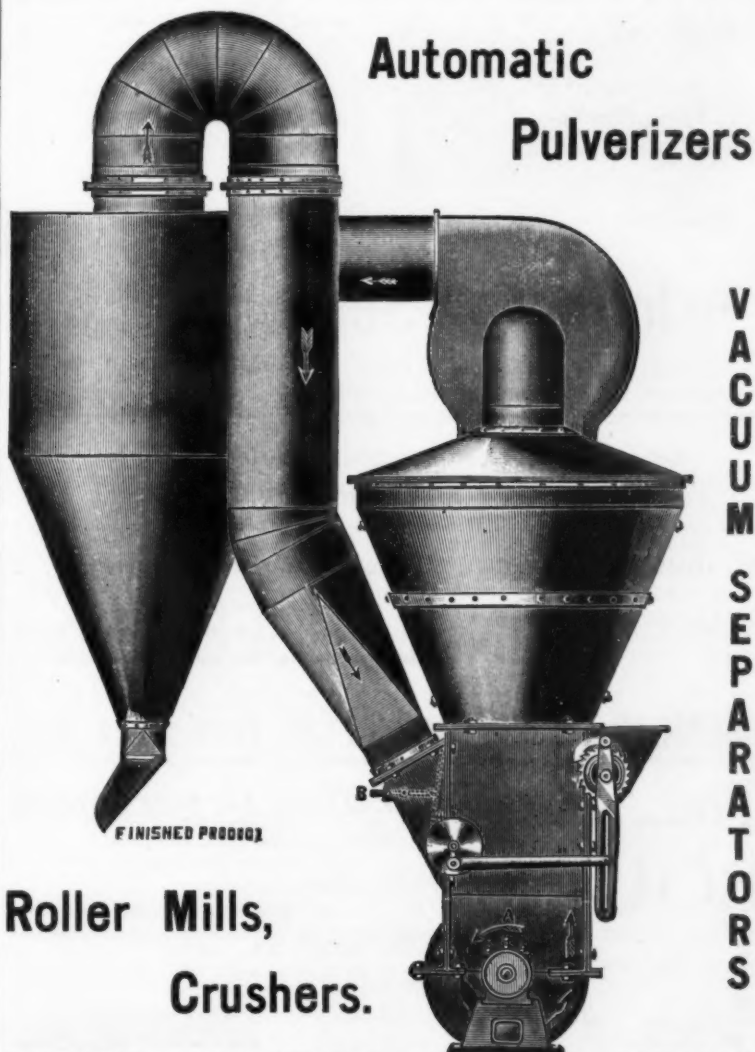
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## Important Litigation Relating to Magnesia Covering Patents.

The Kearsbey & Mattison Co., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breeze, Schoellkopf, Hartford & Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf, Jesse W. Starr, C. W. Trainer Mfg. Co. and C. W. Trainer to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent. of magnesia, and especially coverings containing 85 per cent. of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit. Beware of Fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

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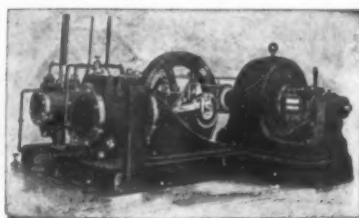
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VOL. XL. No. 7.  
WEEKLY.

BALTIMORE, SEPTEMBER 5, 1901.

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### COPY FOR ADVERTISEMENTS.

Advertising copy (changes or new advertisements) should reach us Saturday Morning to insure insertion in the issue of the following week.

For the first issue in the month we should receive copy by Friday Morning of the week preceding.

In a letter to the Manufacturers' Record Messrs. Bass & Heard of Rome, Ga., write:

We have known something of your splendid journal for fifteen years, and have always regarded it as standing up for and true to our section of the country.

### Railroads and Southern Commerce.

It is customary for the enterprising press of many Southern cities to review at length on September 1 the advance made by their respective communities during the preceding twelve months. The reason for this custom is that such a review covers a year in cotton, the period from the close of the movement of one crop to the beginning of the movement of another. This tribute to cotton is justified by the facts. The disposal of a year's crop represents the shifting of hundreds of millions of dollars and is the basis for much of the industrial, mercantile and transportation business not only in the South, but in the whole country. The importance of the crop is indicated by the fact that cotton and its products constituted during the past fiscal year one-quarter of the exports values of the country. Once it was the bulk of the exports from Southern ports. While it has lost in this respect none of its actual importance, it has companions on the docks in the shape of grain, coal, iron, phosphate rock, lumber, naval stores, provisions, horses, mules and cattle. The varied character of exports from Southern ports and the tendency of these ports to enjoy a greater proportion of the movement of the country's commerce are traceable to increased activity in recent years in railroad construction and in the improvement of the terminal facilities of the railroads at divers outlets on the coast.

That fact may not be positively proved statistically, but in connection with other statistics quite an interest-

ing array of figures bearing upon railroad development and Southern commerce may be brought into a comparison which cannot fail to demonstrate the intimate relations of the two manifestations.

The progress of Southern commerce during the past ten fiscal years may first be considered with the following tables as the basis:

#### EXPORTS FROM SOUTHERN PORTS.

Districts.	1892.	1901.
Baltimore.....	\$98,850,197	\$106,239,081
Beaufort, S. C.....	544,902	129,639
Brunswick, Ga.....	5,585,110	7,552,637
Charleston, S. C.....	16,718,586	7,084,215
Fernandina.....	1,178,701	1,804,770
Georgetown, S. C.....	21,100	5,500
Newport News, Va.....	14,444,367	32,567,912
Norfolk, Va.....	13,065,837	10,308,489
Pamlico, N. C.....	8,186	.....
Richmond, Va.....	5,724,036	17,200
St. Augustine.....	30	.....
St. Johns, Fla.....	104,334	204,670
St. Marys, Ga.....	47,435	.....
Savannah.....	25,704,173	46,738,967
Wilmington.....	5,321,414	12,013,659
Apalachicola.....	183,182	265,782
Brazos de Santiago.....	498,176	185,895
Corpus Christi.....	4,127,240	6,645,019
Galveston.....	35,386,256	101,857,300
Key West.....	831,043	1,033,265
Mobile.....	2,785,735	11,837,105
New Orleans.....	131,252,873	152,776,599
Paso del Norte.....	9,021	4,241,898
Pearl River.....	1,077,707	2,817,298
Pensacola.....	2,982,246	13,455,701
Saltwater, Texas.....	2,358,440	6,980,716
Tampa.....	185,800	1,321,419
Teche, La.....	1,643	.....
Total South.....	\$368,906,230	\$528,684,706
All other ports.....	661,281,918	959,070,851

#### IMPORTS AT SOUTHERN PORTS.

Districts.	1892.	1901.
Alexandria.....	\$11,116	.....
Baltimore.....	13,418,523	\$18,899,473
Beaufort, S. C.....	25,000	192,135
Brunswick, Ga.....	13,742	28,136
Charleston.....	896,681	1,477,719
Fernandina.....	.....	49,867
Georgetown, D. C.....	222,926	243,494
Newport News.....	190,114	4,090,451
Norfolk.....	44,435	593,930
Pamlico, N. C.....	1,566	11,058
Richmond.....	46,066	93,973
St. Augustine.....	2,303	7,875
St. Johns, Fla.....	47,674	61,684
St. Marys, Ga.....	5	.....
Savannah.....	301,904	646,067
Wilmington.....	184,977	180,912
Apalachicola.....	21	941
Brazos de Santiago.....	165,655	46,899
Corpus Christi.....	3,012,862	1,675,320
Galveston.....	1,317,000	953,801
Key West.....	834,496	491,984
Mobile.....	165,778	3,008,449
New Orleans.....	18,909,553	20,462,307
Paso del Norte.....	6,655,371	1,378,510
Pearl River.....	1,758	628
Pensacola.....	64,178	238,334
St. Marks, Fla.....	14	.....
Saltwater, Texas.....	1,015,769	1,105,020
Tampa, Fla.....	423,331	1,513,452
Teche, La.....	34,428	.....
Total South.....	\$48,007,246	\$67,511,418
All other ports.....	779,395,216	765,161,598

So many circumstances influence the figures of the values of commerce in different years that the totals for any one year compared with the totals of another year are not necessarily a criterion of the actual change for good or ill accomplished in the intervening period. For example, the increase in the value of exports from the South from \$368,906,230 in 1892 to \$528,684,706 in 1901, or \$159,688,476, is an advance of but 43.27 per cent., while the increase at all other ports during the same period from \$661,281,918 to \$959,070,851, or \$297,788,933, is 45.03 per cent. advance. By that it might appear that the Southern ports had not held their own. But this view is not had when the values of the imports are also included. These increased from \$48,007,246 to \$67,511,418, or \$9,504,172, equal to 19.79 per cent. at Southern ports, while at all other ports they decreased from \$779,395,216 to \$765,161,598, or \$14,233,618, equal to 1.84 per cent. Combined the exports

and imports show at Southern ports an increase in commerce from \$417,003,476 to \$586,196,124, or \$169,192,648, equal to 40.57 per cent., and at all other ports an increase from \$1,440,677,134 to \$1,724,232,449, or \$283,555,315, equal to 19.68 per cent.

Paralleling this progress at the ports, and undoubtedly contributing to it directly and indirectly, has been an activity in railroad building most marked at the South. Figures upon which may be based an accurate comparison for the ten years included in the period covered by the commercial statistics are not available, but the following comparison of 1892 with 1900 of railroad mileage is sufficiently indicative.

#### RAILWAY MILEAGE.

States.	1892.	1900.
Maryland.....	1,281.21	1,376.16
Virginia.....	3,578.66	3,779.15
West Virginia.....	1,453.20	2,228.05
North Carolina.....	3,570.27	3,831.16
South Carolina.....	2,497.66	2,817.93
Georgia.....	4,368.02	5,651.72
Florida.....	2,569.98	3,299.06
Kentucky.....	2,979.65	3,059.39
Tennessee.....	3,009.01	3,136.95
Alabama.....	3,586.61	4,225.84
Mississippi.....	2,433.90	2,919.90
Louisiana.....	1,953.80	2,824.08
Arkansas.....	2,352.81	3,359.86
Texas.....	8,876.09	9,886.49
Total South.....	44,810.87	52,396.34
In rest of country.....	126,752.65	140,949.44

These figures show that the mileage of the South increased from 44,810.87 to 52,396.34, or 7585.47, equal to 16.92 per cent., while the increase in the rest of the country was from 126,752.65 to 140,949.44, or 14,196.79, equal to 11.20 per cent. This increase in Southern mileage has been accompanied by consolidations of decrepit or incomplete lines and branches into strong systems and the working out of plans for reorganization of existing systems upon the most healthy basis. The results appear both in the shifting of values of one port or group of ports to other outlets, and in the marked growth at particular ports, hastened in some notable instances by an expenditure of millions of dollars. Illustrations of this may be mentioned.

While the Louisville & Nashville Railroad Co. has been maintaining at New Orleans its interests and has been improving by the erection of a modern brick freight depot and the enlarging of its wharf facilities its position at Mobile, it has practically revolutionized conditions at Pensacola, where, in twenty years, it has spent \$1,002,341.41 in terminal facilities, including \$660,460.10 for warehouses and wharves, \$130,900.87 for grain elevator, \$21,188.50 for coaling arrangement, \$6489.09 for arrangement to handle fertilizers and \$102,634.47 for dredging, \$100,000 more being already set aside to continue the deepening of the water about the wharves. It is not surprising that Pensacola's commerce has increased in ten years from \$3,046,424 to \$13,694,095. Similar advance has been made at Tampa, one of the terminals of the Plant system, which has spent in ten years more than \$1,000,000 at Port Tampa, Jacksonville, Brunswick and Savannah, while the wonderful

growth at Newport News, Va., changing radically the customs situation at Richmond and affecting to a small degree other points, is traceable to the expenditure in the last ten years of \$1,400,000 by the Chesapeake & Ohio Railway Co. in constructing at the mouth of the James river four freight piers, a coal pier, a passenger pier, a grain elevator and in providing other arrangements necessary to a magnificent terminal.

At New Orleans, where center several large systems, the Illinois Central Railroad has spent several millions upon the Stuyvesant docks, with wharves 2100 feet in length under one roof, a brick warehouse 1200 feet by 100 and an elevator of 1,000,000 bushels capacity, and upon the Southport terminals with 1700 feet of wharf, two elevators of 500,000 bushels capacity and track room for 600 cars, and is preparing to expend more than \$1,000,000 more in completing the facilities for handling the traffic of its lines, touching most fertile regions of the Mississippi valley between New Orleans and Chicago and reaching toward the grain fields of the middle West and Northwest.

The Southern Pacific, which also has been influential at New Orleans, and which owns or controls probably one-half of the total railway mileage of Texas, has spent for docks, warehouses, etc., about \$250,000 at Sabine, Texas, and at Galveston, through which it handles much of its export business, spent in the year 1899-1900 alone \$1,137,500 in carrying on the development of its terminal facilities upon 203 acres of land owned by it, with a frontage of 3300 feet on Galveston bay.

Over \$2,500,000 has been spent in the development of Port Chalmette. Like facilities furnished by the Ocean Steamship Co. during the past six years at a cost of about \$600,000 in the shape of improvement of the slips for docking vessels, construction of storage shed and laying of tracks have contributed much to the steady progress of Savannah's commerce, to which the Plant system, the Central of Georgia Railroad and the Southern Railway have contributed and which will undoubtedly be largely enhanced with the completion of the splendid terminals of the Seaboard Air Line Railway on Hutchinson Island in the Savannah river, where already over \$1,000,000 have been invested.

Several hundred thousand dollars were spent upon grain elevators, warehouses, special loading wharves and terminal tracks at Port Arthur owned by the Port Arthur Channel & Dock Co., to which traffic in increasing quantities will come by the Kansas City Southern Railway, successor to the Kansas City, Pittsburg & Gulf, which was planned to bring in close touch the grain and provision centers of the West and shipping facilities at the Gulf coast.

The great coal piers of the Norfolk



& Western Railway at Lambert's Point, sending the fame of Pocahontas coal around the world, and foreign steamship connections at Mobile fostered by the Mobile & Ohio, are examples of the additions to commercial advantages made in a smaller degree by other railroads at other ports.

More than one of the ports which have been specially mentioned in illustration of the intimate connection between railroad development and commercial expansion at the South have felt the influence of the Southern Railway's successful operation of more than 6700 mileage. That great company has expended at Norfolk and Pinner's Point approximately \$500,000 during the last six years in improvements, including dredging, filling, switching-yards, docks, power plants, office buildings, cotton platform and three warehouses. It has, in the meantime, made a remarkable showing in the promotion of those enterprises inland which may be expected to become in the near future more mighty contributors to the South's outward trade. In the year 1899-1900 there were completed or went into operation on its lines or on lines tributary to it 514 manufacturing plants. These included twenty-seven cotton mills, twenty-one knitting mills, fourteen pig-iron furnaces, a steel mill, a rod and wire mill, an iron-pipe plant, thirty-nine furniture factories, thirty woodworking plants, sixty-six lumber mills, twenty cottonseed-oil mills, twenty-nine flour mills and seven canneries.

Similar manifestations are appearing along the lines of the Illinois Central, the Nashville, Chattanooga & St. Louis, the Seaboard Air Line, the Atlantic Coast Line, the Atlantic, Valdosta & Western, the Gulf & Ship Island, the Choctaw & Memphis and other roads, being constructed through hitherto untouched territory or representing the consolidation of long-established lines strengthened by modern methods in all departments of railroad building. Great as has been the progress of railroad building in the South, it has not yet reached the limit required before all its resources may come under the inspiration of the steel rail and the steam whistle. Connections bringing Southern ports into quick touch with centers of production within and outside the South have already been made or are being completed. Still, while Texas has but 3.77 miles of railroad per 100 square miles of its territory, and while other Southern States have equipment of the kind far below that of the Middle States, Ohio, for instance, having 21.61 miles of line per 100 square miles of territory, it is obvious that the South is to add considerable to the total mileage of the country. This addition will probably mainly be in the shape not of independent lines competing with existing systems, but rather the building of branch roads and the extension of main lines by those already doing so much for Southern development, and it may be taken for granted that this form of railroad extension will aid materially in the task of giving the South a place of greater importance than ever in the country's commerce.

#### A Chance for Fame and Fortune.

In a valuable treatise, "Cotton and Cotton Oil," Mr. D. A. Tompkins of Charlotte, N. C., touches upon a subject which is likely to become more and more important with every year, the methods by which the difficulties grow-

ing out of a revolution in the labor system of the South may be overcome. Mr. Tompkins, discussing the difficulties in the growing and handling of cotton arising from the demoralization of the negroes at the close of the war, says that the unrest of the planters and their desire to overcome the annoyances of fitful labor led to the invention of appliances which have reduced the number of hands necessary to get the cotton to market. Out of the necessities of the case came the feeder for the gin, the condenser, the improved press and the public ginnery, which were but steps to the utilization of what were formerly waste products, and the invention of devices for improved baling of cotton.

They point to the last machine to be invented before cotton handling becomes practically a mechanical process in which a human being will be concerned simply as an auxiliary. The ultimate invention is the cotton-picking machine, which has been attempted again and again, but which Mr. Tompkins believes to be the most attractive legitimate field now open for inventive talent. To be sure, as he points out, conditions in cotton-growing have materially changed in the past twenty-five years, and the negro is becoming again a tractable helper to the good farmer, who is learning to handle his cotton farm on the same plan as the wheat and corn producers of the Northwest, that is, by working alongside of his helpers. Still the human cotton-picker is a variable and at times a perplexing problem, especially with the increasing demand in the South for labor in lumbering, mining, in railroad construction, and the invention of a machine to do economically the work of a half-dozen hands will be a boon to the South in releasing much-needed help to other industries. A cotton-picking machine will solve several Southern problems. Its inventor will win not only a fortune, but will pass into history as one of the world's greatest philanthropists.

#### Not a Hopeless Project.

Heartily approving the Manufacturers' Record's suggestion of Mr. Stuyvesant Fish for the Presidency, the Greenville (S. C.) News says:

It would indeed be well for the best interests of this country that the next President of the United States should be a man identified with none of the activities of either of the old parties during the past quarter of a century, but we fear that the time is not yet ripe for such an experiment. For the worst interests of the country, unfortunately, it is likely to remain a government by the politicians, of the politicians and for the politicians.

Agreeing with the Manufacturers' Record in its high estimate of Mr. Fish's character and his fitness for the Presidency, the New Orleans Picayune expresses similar hopelessness about the nomination of such an one. It believes that he would display the courage and conscientiousness and honesty of his distinguished father, and says:

Stuyvesant Fish is in the prime of life, a man of affairs, experienced in the handling of a vast transportation system, a gentleman of broad culture and high social standing. His extensive business interests are possibly as largely in the Southern States as in the Northern, and few men are as free from local or sectional bias. He is peculiarly identified with the chief interests of the vast Mississippi valley, to whose development his great railway system largely contributes.

Regarding Mr. Fish in the light of his personal qualifications and accomplishments, his thorough identification with the most important business interests, his high character and social position, it would not be easy to find a man better equipped for the

Presidency of this great republic. But the dream of the Manufacturers' Record, that a Chief Magistrate can be elected who is not identified or actively identified with either of the old political parties, is too wild to receive a moment's attention. The government of the United States is a government by political parties, and party politics will continue for some time in the future, as they have for some time in the past, to control the choice of presidential candidates.

These sentiments were expressed by our friends in Greenville and New Orleans before they had read our last week's editorial page. They realize, no doubt, by this time that our suggestion, with Mr. Fish as its inspiring text, is not such a hopeless project after all. Nor is it wild, as a moment's thought will demonstrate.

Theoretically, ours is a government by political parties, as the Picayune says. Practically, it is a government by politicians, as the News says, party being merely the medium whereby politicians sway the masses to their purposes. No one knows better than the politicians how great at times is the necessity for sane action to prevent the annihilation of party, and seldom in recent years has a national political platform been framed without a particular idea in it being pushed to the front as the overshadowing one for the purpose of influencing favorably a deciding class of voters, attracting the practical interest of an influential body of citizens or encompassing both objects at once. The readiness with which party politicians have veered radically from historic party principles has made mere party nothing to hundreds of thousands of voters, especially among business men, save as party leaders, to wit, the politicians, may be compelled through it to such action as may promote the business interests of the country in spite of party politics.

Occasionally, indeed, the politicians have nominated and elected men to the Presidency who were not actively identified with party politics. There, for instance, was Zachary Taylor elected by the whigs in 1848 in spite of his inclination because of environment toward a principle which was rapidly asphyxiating whigism in one part of the country. There was Grant, elected in 1868 by the republicans, although he had been classed generally as a democrat. And certainly the spectacle of the candidacy of Gen. John M. Palmer, of varied and varying propensities in politics, and Gen. Simon B. Buckner on the same ticket in 1896, when the two old parties occupied positions practically the reverse of those they held forty years before, indicated pretty strongly that in the choice of presidential candidates in this country all things are possible.

It is the party that has sense enough to meet the reasonable demands of a substantial element in framing and carrying out its policy which is likely to control the longest the destinies of the country. It is the politician who is willing to sink decayed and useless party dogmas in adjusting his conduct to the obvious material needs of his country who passes into history as a statesman. When a man of recognized lofty principles and high character, of definite purpose, and tried ability in public affairs which work for the good of the country, such as is Mr. Fish, may be induced to stand for the Presidency, that party will display political acumen of the highest degree which is fortunate enough to tender him the nomination.

The election of General Taylor and the election of General Grant were a

consequence of the response of the parties which nominated them to the feeling that a war lord should be the leader. The same feeling has been influential in the nomination of all but one successful candidate since General Grant, but it has been a weakening influence which even the last war has not been able to quicken materially. On the contrary, in both the great parties there is an increasing host of voters demanding that a business man shall be the nominee in 1904. That is why astute party leaders are taking such deep interest in the task of seeking a candidate who will command the respect and support of the business element of the country. Recognizing this situation, the Manufacturers' Record has suggested the name of Mr. Stuyvesant Fish as a solution of the difficulty in which the leaders find themselves, no matter to which party they belong, and no matter whether both the old organizations unite in nominating him. The pleasant duty of the Manufacturers' Record is already meeting its reward in the readiness of representative Southern newspapers to acknowledge, in spite of a pessimism which is not incurable, that Mr. Fish is the kind of man that ought to be elected to the Presidency.

#### An Exploded Threat.

At a recent joint meeting at Union, S. C., United States Senator Tillman, alluding to the probability of cotton manufacturers of South Carolina and their employees making their influence felt in politics for the material advancement of the State, indulged in language which was regarded by many persons as a threat against the manufacturers. His language was quite diplomatic, and his sentences were so framed as to impress superficial thinkers with an idea that opposition to him would necessarily mean coercion of the operatives by their employers. His scheme was brought into the glare of electric-light publicity in a dispatch from Columbia to the New York Sun, which says:

Senator Tillman has made an open and unmistakable threat to the cotton manufacturers. Since making his speech at Union he has declared in private that his remarks were intended as a threat, and that if mill officials attempted to govern the votes of the operatives the legislature would apply the screws in such a way as to bring them to terms. A half-dozen years ago this threat would have had a very marked effect, but now it is different. The great and growing industry can be hampered and affected injuriously by legislation, and several years ago Tillman's mandate would have been obeyed. Now, however, the legislature is composed of different men. The industry is too important to all cotton-growers and to over 50,000 operatives to be trifled with either punitively or experimentally. Local mill-workers cause the farmers to get a half-cent a pound more for their cotton than would otherwise be the case, and the factories are too important in many ways to the surrounding country to be attacked for political purposes. The legislature that has shown itself so friendly to manufacturers will be unlikely to favor any radical measures that might cripple the industry.

These sentences demonstrate that the hopes of persons who have the vital interests of South Carolina at heart are likely to be fulfilled. Cotton-growers who receive one-half cent a pound more for their cotton because cotton factories are near by, and 50,000 operatives who enjoy the opportunity to make an honest living and to lead decent lives, are rather weighty influences to be considered by anyone preparing to wage war upon the manufacturers because the manufacturers see fit to disregard mere politicians in their political action. For where men



begin to ask where they are benefited by the success of this or that office-seeker, the day of the office-seeker is beginning to wane. If this be the case in South Carolina that State is to be congratulated. Again, the attitude of the legislature towards manufacturers seems to be quite friendly in spite of the efforts during the past two or three years to interrupt through legislative action the harmonious relations of the cotton-mill managements and their operatives. South Carolina should encourage its legislature to maintain that healthy position.

In this connection it may be well to state that the difficulty at Columbia, of which exaggerated reports have been published, can hardly be regarded as connected with the speech of Senator Tillman except as it illustrates possibly the ill-effects upon the unthinking who take his remarks seriously. On the day after the announcement sent by press dispatches from Columbia that a strike had been declared against four of the mills there the Manufacturers' Record was authoritatively informed that one of the mills was running at its full capacity and the other three at three-fourths of theirs. The information was:

The so-called strike ordered by the Textile Union against the mills mentioned could operate against no one in the mills, for all the union men who had declined to conform to the rules of the mills were discharged on Monday last. The mills are not seeking their return, and, on the contrary, have given notice to the leading agitators among the union men to vacate the buildings occupied by them. The places made vacant, either by the action of the mill authorities or by those who may have voluntarily left the mills, are being rapidly filled by others. The mill authorities have no compromise to make with the representatives of the Textile Union, and are determined to take back none who are in sympathy with them. The vacant places are being rapidly filled by other operatives, and the mills have not been interfered with to any serious extent by reason of the action of the so-called Textile Union.

A gentleman thoroughly acquainted with the facts at Columbia writes to the Manufacturers' Record as follows:

A so-called labor union has attempted to molest us. We have refused to acknowledge them in any shape or form. At present seven-eighths of our mills are in full operation, and are short only a few weavers. There is no strike in Columbia. All obnoxious hereafter will be discharged.

There is a sharp difference between the status of Northern and Southern help. Our help in the South have never been beset with the conditions which cause the Northern help to seek to organize unions here and to demoralize our operatives' advantageous surroundings. If conditions were reversed our help could get no hearing from the Northern end of the line, and would be told to mind their own business. Our cotton-mill help is the most independent help in the world. It receives better remuneration and lives better than the New England help. The advantages in this respect enjoyed by our mills over those of New England are realized there, and consequently the situation in New England is made use of among our help not acquainted with the facts in the hope that demoralization may come to the Southern mills which are offering, from a progressive standpoint purely, advantages to their operatives. Our operatives really hold the whip-handle. Their condition is far better than that of the ones in New England. They make more money, they enjoy more privileges and are free from obnoxious importations which have become in New England a curse to the establishments. These facts are not known to our operatives. Their lack of knowledge is worked upon by sharpers, especially paid for the purpose, and we are confronted from time to time in the South with conditions similar to those in Columbia today.

As stated before, there is no strike here. Seven-eighths of our mills are at work, and we have more spindles running and more help than the number of union help discharged. This is the true condition of affairs here, and this locality has been grossly misrepresented in other reports sent from here.

The South is to be congratulated upon the stand taken by the mill managements at Columbia. It should be imitated whenever the occasion arises. The attempt there seems to be traceable to the efforts of Northern unionism to demoralize labor conditions at the South for the sole immediate benefit of Northern unionism. As our correspondent truly says, if Northern mills enjoyed the advantages possessed by Southern mills there would be absolute silence at the North about conditions of Southern mill labor. It is another case of an effort which has been made again and again to stampede Southern labor by suggestion pushed so rapidly that its victims may be lost before they regain their wits. In resisting this scheme the mill owners are doing Southern labor a great benefit. They are not contending against the right of operatives to organize, but they are contending for the right of the mill owners to operate their mills and of the operatives to take employment wherever they may desire, regardless of what the union or its agitating parasites may say.

### The Pity in Texas.

The announcement of the possibility of the United States Steel Corporation's removing plants from communities in which hostility was manifested against it was suggested a short while ago by the Manufacturers' Record as an opportunity for the South. The intention of the corporation was a striking object-lesson of the ill-effects of such hostility, and, at the same time, from the reverse standpoint, of the good effects of a friendly attitude toward creative capital. It was needed, perhaps, to emphasize the fact that capital will not go where it is likely to be harassed unduly, and where the risk of hostile legislation counteracts the possible returns from the investment. The lesson seems to have been lost upon a portion of the Texas legislature, for one branch of that body has gone out of its way to demonstrate how easily a legislative body may commit itself to foolhardiness. As far as is known, the State of Texas has not been affected in any way by the contest between the Amalgamated Association of Steel Workers and the United States Steel Corporation. No members of either organization have a habitat in Texas, it is believed, and if future legislatures should continue to present to the world the spectacle given by the present house of representatives, neither is likely ever to have a habitat there. Yet, in the midst of a session called for a special purpose, the house of representatives has felt itself moved to resolve that the United States Steel Corporation is the very head and front of the "offending system" of combinations of capital in industry, and furthermore, that it is in hearty sympathy with the Amalgamated Association in its "contest for a recognition of unionism."

It is a pity about Texas. Some critics were once unkind enough to intimate that its political freaks were necessary to prevent the rest of the world from forgetting that there was such a State. That never was true, and certain it is that such freaks are now not only unnecessary, but that they are a positive weight upon the State's development. One may hardly doubt that the mass of its people, occupied in making an honest livelihood, utterly abhor the position assumed by certain of its legislators from force of habit and a belief

that the people still want sand to be thrown in their eyes, and that the people are taking less interest in the contest for "a recognition of unionism" than most people in the rest of the country, who are really very slightly interested in it. Still the people of Texas permit fifty-five men to go to the legislature who are willing to be recorded as endorsing the action of the Amalgamated Association, about which they have probably only hazy ideas, and who have not been able to acquire the intelligence even of the Labor World of Pittsburg, a trades-union organ, which utterly condemns Shaffer and his movement against the Steel Corporation. The people should not be so easy-going. They ought to realize how thoroughly critics of Texas will seize such demonstrations as material to be used against Texas. How long will it take the people of Texas to learn that the future welfare of their State is menaced by carelessness in the choice of members of the legislature?

No better illustration of the impression likely to be created in other portions of the country by Texas freaks at large may be had than the following from the New York Sun, commenting on the incident:

It is unfortunate that a great progressive State like Texas, full of opportunities for investment and eagerly seeking capital for its development, should be hampered more or less, year after year, by a set of paltry politicians, belching the draft of Populism. Most Texas business men regard the Texas legislature as a nuisance. To indifferent outsiders it seems a perennial joke. Necessarily it is a good deal of a humbug. The amount of union labor in an agricultural country cannot be large, and a union of farm laborers, managed after the manner of the Amalgamated Association, would be looked upon with horror by the moralists in the legislature.

Probably the Texas legislature would not face a resolution directly attacking the obligation of contracts, but it has done substantially the same thing by approving a strike founded upon the repudiation of a contract and instituted by an association that is striving for monopoly with a fierceness unknown to any combination of capital.

### Preserving Forest Wealth.

Secretary Wilson of the United States Department of Agriculture, who has, since his entrance in the Cabinet, shown such a friendly and practical interest in everything affecting the South's welfare, has issued a note of warning against the destruction of Southern forests. On a visit to Western North Carolina he has had an opportunity to see facts of uneconomic handling of forests, and in an interview with the Charlotte Observer points out the signs of this wasteful policy and says:

These mountains are the nurseries of streams that are the salvation of thousands of farms and furnish the motive power for a countless number of spindles. Some of the principal tributaries of the Ohio river have their source in these mountains. The South is getting a big share of manufacturing establishments. Water provides a cheap and effective power by which these plants may be operated, and therefore the South cannot afford to see the work of destruction go on indefinitely. Unless the timber is preserved the rich valleys will be subject at all times to either floods or drouth. The leaves and mosses hold the moisture, and when hard rains come prevent the lowlands from being flooded, and gradually feed the streams. In this way the farmer will be the principal gainer through the preservation of the forests, and at the same time there will be enough timber to supply all legitimate wants. When trees are ripe they should be cut, just as corn should be cut when it is ripe. The simple need is intelligent direction in the cutting, and the prevention of wholesale destruction of the trees in certain localities.

This warning comes not too soon. It finds re-enforcement in the purpose of

longheaded Southerners to bring public opinion to the point of checking the waste of what ought to be a perpetual source of revenue to the South and a direct aid to its industrial development. Two or three weeks ago the Tennessee Forestry Association was organized at the University of the South at Sewanee to procure the introduction of conservative methods of handling forest lands. The president of the association is Dr. H. J. Ramage of the University of the South, who has recently called attention to the necessity for such conservative methods. One of its vice-presidents, Mr. Charles A. Keffer of the University of Tennessee at Knoxville, in a letter to the Nashville American says that the organization grew out of the work of the United States forestry bureau in the domain of the University of the South, which owns an extensive forest tract in the Cumberland Plateau. There the bureau of forestry is giving a practical demonstration of the possibilities in scientific methods of lumbering, a demonstration, as Dr. Keffer says, of the utmost interest not only to lumbermen, but to land owners, who must consider the future value of property which has been cut over. In addition, the question of the future timber supply of the State, now being drawn upon with the advance in mining and building operations, is to be considered, and the association will endeavor to secure legislation looking to the protection of the forests from fire, the encouragement of forest owners in handling their property with greater thought for the future, and the promotion of the restoration of forest lands through tree planting. At the initial meeting of the association Col. J. B. Killebrew urged intelligent men all over the South to take a practical and effective interest in the subject, for, as he said:

The decreasing supplies of timber in the North and East are forcing an ever-increasing demand upon the forests of the South. The lessons to be read from the experience of States already stripped of their woods should not go unlearned. The development of Tennessee's mineral resources will demand enormous quantities of timber, and let us not repeat the folly of Pennsylvania, where mining timbers have to be imported, and where the State has been forced to buy land in order to maintain an amount of forest sufficient to insure a reasonable supply of water and wood.

These views are shared by men in Georgia interested in the naval-stores industry, and Prof. Charles H. Herty of the University of Georgia is at work in the turpentine region experimenting in the direction of a change of methods in handling the pine trees, whereby vast areas may not only be safe from denudation, but may be infinitely a source of wealth. Directly concerned with these experiments is the National Tank & Export Co. of Savannah, which not only seeks to introduce better processes of manufacture of the naval stores, but also to obtain through an experiment farm the co-operation of the United States government in the protection of the yellow-pine forests of the South, so rapidly disappearing before the turpentine workers and the lumbermen.

In Texas, where one of the great companies operating in the neighborhood of Beaumont has planned to cut timber in such a way as to preserve the source of supply, the legislature has before it a concurrent resolution calling upon the United States government to prevent further inroads upon the vast primeval forests of white pine, yellow pine, spruce, fir, cedar and other trees upon the Sacramento moun-



tains in Southeastern New Mexico. The reason for this resolution is the fear that lumbering operations in the mountains will modify disastrously the meteorological and physical conditions which do so much for the fertility of a large area of Texas between the Brazos and Pecos rivers, including especially the table lands of the State. The legislature does not wish the reservoirs of the streams of that region to be destroyed, and in appealing to the United States government are helping to develop the public sentiment in favor of such undertakings being in the care of the government. Just as the plan for the Appalachian Park is for the benefit of a variety of interests in five or six of the older Southern States, so the plan for a national park in the Sacramento mountains is for the benefit of the largest State in the country, of New Mexico and possibly other political ingegers. It is impossible for a single State to extend its forestry operations beyond its own limits, or, as is needed by Texas, to go entirely beyond its boundaries in carrying out plans for self-protection. Hence, as in the proper handling of the Mississippi river and other great streams, the national government alone is the proper authority to ensure the preservation of Southern forest wealth.

It must be preserved, not only on account of the lumber interests, but for the good of agriculture and of many lines of manufacturing. State legislatures may expedite the work of the national government, as they have done in the States in which the proposed Appalachian Park will lie, by waiving rights to the land necessary for the purpose, or in other ways. The people of the several States should be impressed, through such organizations as the Tennessee Forestry Association, with the necessity for legislative co-operation, so that their representatives in the legislatures may be ready to act intelligently whenever the occasion arises.

### ENLARGING OPERATIONS.

#### Beaumont Companies Preparing to Market Their Oil.

[Special Cor. Manufacturers' Record.]  
Beaumont, Texas, August 30.

The larger oil companies are still reaching out after business. One contract shows to a great extent the rapidity with which facilities for shipping the oil are being gathered together. The contract is that by which the Higgins Oil & Fuel Co. has undertaken to furnish the Santa Fe Railroad with 2,000,000 barrels of oil for use on locomotives. In last week's letter it was mentioned that the Santa Fe Company was constructing many tanks, and this is what it was for. The price is not stated. This company has also organized another feature which is proposed to be of great benefit to it. I refer to the Higgins Oil & Fuel Co. It has established almost within the corporate limits of Beaumont what is known as a loading rack, from which it proposes to load cars, piping the oil from the field. The capacity of this rack is very great. The capacity of the racks to load is eighty-six car-loads per hour, so a local paper gives it. The object to be attained by this device is the securing of lower freight rates. This shows how the larger companies are equipping themselves for a large business in a proper manner. Nothing could better show the faith of the oil operators than the vast expenditure of money which these shipping preparations of the Higgins and other companies are making. In this connection the National Oil & Pipe

Line Co. has just completed its pipe line to Port Arthur, making two pipe lines complete to that point. The pipe line of the Lone Star & Crescent Oil Co. to Sabine is about finished, or will be within ten days to two weeks, thus insuring any of the oil companies reaching the Gulf with oil for export that wish to do so.

The amount of work that has been done, the money expended and the results obtained during the short time since oil was first discovered eight months since is wonderful, and can hardly be grasped by one who has not seen it. Millions have been expended in this county within the last few months. And the work has only just begun. There are many, many more tanks to be built. One firm alone has twenty-eight tanks of 37,500 barrels capacity to build, while another is engaged on another lot. It takes almost one saw-mill's time to cut the lumber used by these oil men every day. Therefore it may be said that outside of the long-deferred realization of the dream of an outside well, there is nothing causing so much interest as the very concrete manifestations of the operators' confidence in the future of this oil field, and the principal topic of interest over the State and here at Beaumont is the question of how best to handle the oil and dispose of it to the best advantage.

There is considerable opposition in this part of the State to the proposed tax of 2 per cent. on all oil receipts which the governor recently recommended, and other parts of the State are also in opposition to it, but whether the opposition will be strong enough to defeat the measure is unknown at this time.

The first of the Shell line of steamers is due at Port Arthur about the middle of next month, and it is reported to be a 50,000-barrel one. This is the company that has contracted with the Gaffey Petroleum for all its export business, and it is thought that this is but the first of a series of vessels which will begin arriving soon at Port Arthur for the transportation of oil to Europe. Dr. Paul Dvorkovitz of London, England, has been here during the past week inspecting the oil field. The doctor is an expert in such matters, being particularly familiar with the Baku fields. He professes to be greatly amazed at the oil in this section, and states that the capacity of this Hill equals the world's production, but argues from this that it will in no wise affect the price or consumption of oil except to better the latter. His idea is that with the additional supply of fuel more of it will be used. He is here in the interest of English capital. What with Caracristi, Hill, Oliphant and the doctor, the town of Beaumont has been entertaining some very distinguished visitors of late.

Mr. C. F. Z. Caracristi was invited today to accompany a committee of the prominent oil operators of this city to the oil fields to consult with them in regard to the best means to be used for the prevention of fire. It was to secure the expert assistance of Mr. Caracristi that he was invited. The committee decided for the present to thoroughly trench the Hill, to remove therefrom all debris and tents, and to prohibit smoking in the vicinity of the wells.

### Oil at Prestonsburg.

In a letter to the Manufacturers' Record Mr. Walter S. Harkins of Prestonsburg, Ky., writes that the New Domain Oil & Gas Co. of that place has found another oil well that produces twenty-five barrels of oil per day in a sand different from that in which oil has heretofore been found, and which is of especial value, in that it gives information of new oil territory in that district. Other wells

are being drilled, and the people are much encouraged to believe that a great deal of oil will be produced in that immediate section.

### THE USES OF OIL.

#### Importance of the Beaumont Discovery Hardly Realized.

[New Orleans Times-Democrat.]

The Providence (R. I.) Journal complains that the North is not paying enough attention to Texas oil, not realizing the importance of the discovery, but allowing the South alone to utilize this new, cheap and valuable fuel, and thus giving that section a splendid chance at industrial advance and prosperity.

"A large number of business men in different parts of the country," it remarks, "are not showing the interest they should manifest in Texas oil."

The Southern Pacific and Santa Fe roads are converting their coal-burning engines to oil burners. A few cotton mills in Texas are preparing to use the new fuel. A big cottonseed-oil plant in the same State has decided to stop buying coal. The other day the Texas authorities, having first equipped the State institutions with oil-burning apparatus, bought the oil needed for the year. A few days ago the proprietors of the great smelter which is under construction at El Paso, Texas, where a smaller one was recently destroyed by fire, announced that they would equip the plant with oil-burning furnaces.

These are, however, only a few of the instances in which oil is being used as fuel or where steps are being taken to use it. The fact is that it has taken some little time to get the different factories, etc., equipped with machinery that will enable them to use oil as fuel instead of coal, and some more time to distribute the oil where it can be used to advantage. But, as we have noted, many establishments are now being equipped, both in Louisiana and Texas, to use this new fuel, and the chances are that it will come into general use in the Louisiana sugar-houses by grinding season.

The Journal places the probable output at 1,000,000 barrels for every day of the year. This will give a total annual production of 365,000,000 barrels. The country's yield of petroleum before the Texas wells were opened was, on the average, less than 60,000,000 barrels. Considering the figures of production, it is plain that the prospective supply of the Texas oil, looked at with regard for some disappointment in the flows of particular gushers, is fully six times greater than the total yield of the country's other fields, even including those of California, which have lately begun to produce.

After discussing the various aspects of the oil business, the difficulties it has to encounter and the probabilities of laying down the oil for fuel purposes in the North, as well as in the South, the Journal is convinced of the magnitude of the discovery and the possible effect it will have upon the industries of the country, and speaks enthusiastically of it as follows:

"The stories of the potential and in some cases actual riches of some of the Texas oil magnates are not overdrawn, considering the productiveness of their wells. At the present price the medium calculation of the supply promises an annual return to Texas of over \$100,000,000. Inasmuch as they will manufacture little of it, at least according to their present plans, that revenue will be almost all profit. No American, accustomed as he is to bonanzas, ought to disbelieve in the fruition of such hopes and chances as are thus pictured, or fail to understand what

the results will be for Texas. In a few short years it may become the wealthiest State in the Union, and may furnish the riches of the country's wealthiest men of the not distant future."

There can be no question on the point. The Journal is right; the Texas oil discovery has not received the attention and consideration in the North it deserves. Its full importance has not been realized nor the probability that it will materially change the industrial map of the United States.

### OIL NOTES.

#### Facts About Petroleum and Its Uses.

The Moulton Valley Oil Co., with capital stock of \$500,000, has been incorporated at Montgomery to operate for oil on land near Hartselle, Ala.

According to the estimate of Mr. Geo. P. Brown, secretary of the Houston Business League, industries in Houston, Texas, represent an investment of \$9,000,000. As a result of oil production in Texas half a dozen or more of these industries are using oil for fuel.

As an indication of the interest felt in the possibilities of petroleum as fuel, Edgar M. Moore, representing the J. M. Guffey Petroleum Co. of Port Arthur, Texas, stated recently at New Orleans that his company has received inquiries from many parts of the country, some of them as far as 1500 miles distant from Port Arthur. The company has shipped 3500 barrels of oil to the American Salt Works at Morgan City, La., and has made shipments of 5000 barrels for the new tank of the Leon Godchaux reserve plantation. The Gretna (La.) Ice Co.'s plant has arranged to use Beaumont oil for fuel.

### UNCHANGED AT BIRMINGHAM.

#### Prices in Iron Have Been Firmly Maintained.

[Special Cor. Manufacturers' Record.]  
Birmingham, Ala., September 2.

The iron market, as compared with the preceding week, shows no change of moment. The demand has been fair, without being active. Prices have been maintained, and in the majority of cases very firmly so. Buyers have as a rule desired prompt delivery, and in several cases it was worth slight premium. There was a fair demand for foundry irons, which were not easy to obtain for delivery desired; in fact, there has been more or less of borrowing and swapping around in order to make deliveries of these grades. No. 2 foundry sold at \$10.50 and \$10.75. Some outside the district went on the basis of \$10.50 here. There were no large lots placed in single orders. No. 3 foundry sold both at \$10 and \$10.25. No. 4 foundry was pretty firmly held at \$9.75, while gray forge was maintained at \$9.50. There were whispers of sales at lower prices, but no confirmation could be obtained of them. Basic iron was in fair inquiry, but no sales were reported. Steel continues in good demand, and sales are limited by conditions. Prices are not open to every inquirer, and in the majority of cases are a sealed book.

The rolling mills are doing a fine business and find a ready market for all their output. Their main trouble now is lack of labor. They are running double shifts, and could, if they had the men, run three shifts. In the strike districts the discontented have been made aware of the situation here, and some have been induced to come. More are coming, and it is probable that if the strike will last awhile longer we will gain a perceptible increase

in our labor. The deficiency in our labor ranks does not come from defections, but is due to the increase in our industrial interests. The question of labor is getting to be a serious one. The additions to the industrial interests at Ensley, already determined upon, will require 1000 additional skilled workmen. From whence are they to come?

Mr. G. R. McCormack, for so many years the general manager of the Tennessee Company, has accepted a similar position with the Woodward Iron Co., and entered upon his duties.

Boring for oil is the fad now, and wherever surface indications give any promise of results the preliminaries are at once concluded.

It is now given out that our 10-story office building to be will be commenced October 1. Tenants on the site have notice to vacate. This looks like business. The activity here in all lines, so frequently chronicled, still continues, and so far there is no evidence of a slow-up. Among the latest enterprises is the leasing of the State salt lands in South Alabama by a company of Birmingham capitalists. There is a good deal of salty talk in connection with it, but it's oil they are after, and if surface indications are any guide they will strike oil. An oil field added to the diversified wealth already enjoyed in the State would draw outside capital to the State in large amounts and largely add to our importance. J. M. K.

#### The Pig-Iron Market.

Matthew Addy & Co. of Cincinnati in their weekly report say:

"September opens with excellent prospects. There are good inquiries at the present time, and the month has already seen some fair sales for delivery both through the balance of the year and into next year. Of course, it goes without saying that the usual run of carload orders is being received. Last month's business was a surprise. It was not only much better than was expected, but it was exceedingly good, speaking absolutely, and not relatively. It was feared for a time that the steel strike would seriously interfere with new trade. Apparently the steel strike has rather helped matters than otherwise. There is the same insistence on the part of buyers in regard to quick shipment that has been such a feature for the past three or four months. Consumers apparently are not able to get iron forward fast enough, and there is no question but that consumption is still at high-water mark. It has not shown the slightest sign of receding. Statistically, the pig-iron market is getting in better shape right along. Production has been growing less and consumption is at the present time unquestionably greater than the current furnace output of the country. The stocks on hand in furnace yards are insignificant, and are being steadily decreased. Consumers have no stocks in their yards worth mentioning. In some grades of Northern foundry and Southern soft irons there is already a decided shortage, and consumers who are trying to buy for immediate delivery find that they must wait from thirty to ninety days for shipment. As matters are at the present time, we shall not be at all surprised if the buying this month is decidedly brisk and animated. Every indication points to a lively trade."

#### Grain at Baltimore.

During August 6,669,981 bushels of wheat were exported from Baltimore, breaking the record for any one month of such exports from that port. In addition, 117,943 bushels of corn and 102,926 bushels of rye were exported.

## FOREIGN TRADE.

This department is designed to set forth opportunities for the extension of the trade abroad of American manufacturers, and to record facts about the rapidly-developing commerce of the South.

### TRADE WITH PHILIPPINES.

Breezy Comments of One Who is on the Ground.

Editor Manufacturers' Record:

I am in receipt of your favor of June 4, accompanied by your publication of May 30, whose familiar face has a homelike look, I having been a reader of it for many years when in the machinery business in Chicago.

I opened your letter with some trepidation, expecting to have a lesson read me for not doing as I agreed long ago and write you regarding matters of interest here. I was thankful to see you had forgotten me. On December 29, 1899, you wrote me, as I was about coming here, and it was my intention to have done as you requested, and advised you of conditions as seen by a practical man, from a mechanical standpoint, and not as one who looks for "suckers" to invest money.

Three or four leading publications, aside from yours, asked me to do the same thing. I had been out here in the navy during the Spanish war, had kept my eyes very wide open, and thought I knew something. Coming back, being ashore all the time, I have had better opportunities for observation, and in the course of three months was in good condition to write you and all the rest very wise articles. I had consulted all the authorities, met the oldest inhabitant, and a good many of him, and was loaded to the muzzle with solemn facts.

Then I commenced my articles. Oh, but I had some nice things for you! But I made the fatal mistake of continuing my investigations, and one by one the props were knocked out from under me, and I found that I had the most charming collection of facts that were not so (never mind the Hibernianism) that were ever gathered together. You and I are both in luck that they were not published, because we would have eventually had to invite each other to a crow dinner.

You ask regarding the handling of American products, presumably machinery and supplies. Even in that question the mining interests are involved, for, should we find extensive mines, the amount of machinery required will be very great.

Machinery for the great agricultural interests of sugar, rice, hemp, tobacco, etc., has scarcely made a start yet, and whatever is employed is of the patterns used before the American occupancy. Now conditions are settling, and operations in the country are becoming safe. A market should be expected in the near future for improved American appliances.

Saw-mills of modern design are just beginning to come in. While I have no question of being able to saw these native woods of the harder varieties, some trouble has been experienced, and more or less experimenting will have to be done. With the very extensive growth of superior woods here, the interests at stake are so great that all mechanical difficulties will be overcome. The softer woods are, of course, as easily handled as in the States.

The introduction of American machinery and supplies of every nature is steadily increasing. I have personally sold nearly to the value of \$100,000 (gold) since coming here. My sales cover a very wide range, but mostly come under the classification of machinery and supplies. The outlook for the future seems to be

excellent, but until the tariff is definitely settled dealers will carry as light stocks as their business will admit.

There seems to be a demand for almost everything that sells at home, excepting such as pertain to a colder climate. The most unexpected sales are made. Who, for example, would suppose these natives, earning the most slender salaries, would buy bicycles to ride in this hot country? And still they do, not as a rarity, but commonly. Bareheaded, and frequently barefooted, with just clothes enough on to avoid the police, they come whirling by my window on the smooth pavement, reeking with perspiration and calling it fun.

American manufacturers who make first-class goods and desire to extend their business should early seek a representation here. It is unwise to send cheap goods here. Both the ocean freights and the heavy custom duties are based upon weights, and it costs as much to send poor machinery here, pound for pound, as good.

The American manufacturer who reaches out for foreign trade has much to learn. A few of our manufacturers who have been in the business for some time issue the most admirable catalogues that newer aspirants will do well to study. Prices, discounts, weights, both of the machine and as boxed for shipment, cubic measurements, cable-code words covering every article and duplicate catalogues in English and Spanish. The weights are given in pounds and metric and the boxed measurement in feet and metric.

Our English competitors always give list prices in their catalogues. American rarely do. Over and over again manufacturers write me, sending catalogues unpriced, and say if I see anything I like the looks of they will be happy to quote prices. To write and receive an answer usually requires from three to four months. To cable costs about \$1.80 (gold) per word, including the address as words to be paid for. A customer comes to me in a hurry for something and wants a price. I show him a beautiful picture book (for our people do get up the finest catalogues on earth), and he sees what he wants and asks the price. I say: "My dear friend, I do not know, but the manufacturer, some 10,000 miles away, says he will be 'happy' to give me prices, one thing at a time, and in the course of twenty years I'll know all about this book. Please sit down and wait four months and I'll tell you what the thing is worth." He intimates he is in a hurry. "Then I'll cable if you will give me \$25 to pay expenses. It costs more, you know, because the manufacturer has no code words for his goods."

Perhaps you think I am exaggerating. Not at all. Not only in my own business, but in those of other American dealers here are we continually running across the assuring words in our catalogues, "Prices furnished upon application." With certain lines of goods, especially machinery, it is necessary for the maker to know exact conditions, in order to furnish the machine best adapted for the purpose; but why a man making the simplest articles of trade should attempt to conceal the price at which he is willing to sell them is a mystery to all dealers here. One would think from the actions of some who write me that they had stolen the goods and were afraid some one would find it out.

I am writing you a hasty, rambling letter, in the midst of a busy day's work. It is a personal one, and with no attempt to smooth it up for publication. If you think anything I have said will be of interest to your readers, get out your blue pencil and get it into classical English

for me, as you know so well how to do. I feel this is a country of great possibilities, but am guaranteeing nothing. I am willing to take my own gamble, but am not urging friends to come here or to invest. I am here to sell machinery, and not to work schemes.

I was about to say "Yours truly," when it occurs to me you may be interested in the new Manila Stock Exchange we have recently organized. An English Chamber of Commerce has had a struggling existence for several years, followed some two years ago by an American one. Neither has amounted to much up to the present, probably owing to adverse conditions of the war. The field they cover, however, seemed to be less broad than present conditions demand, and the Stock Exchange is the result.

The name is not indicative of the full scope of the Exchange, as our charter covers handling machinery and supplies among other items. The seats are limited to sixty, and the number will not be increased. I send you a list of the charter members, of whom I am one. Fifty-three chairs were taken by the charter members, and the remaining seven were promptly taken as soon as the Exchange was fully organized, with dozens of applicants who were unable to obtain admission.

The members comprise the oldest and strongest of the English, German, Spanish and Chinese houses, who have made the business of the islands what it is, and who will largely shape their business future. They handle practically all the sugar, hemp, tobacco, rice and other leading products of the country, and some of them are capitalized far into the millions. In addition to these are the strongest of the newer and best of the American houses, representing (as I do) many of our great houses in the States.

It will be one of the functions of the Exchange to list the stocks of the companies in business here, both old and new, and so furnish reliable information to all as to the standing of such companies. To the many who are asked to invest here such information will be of great value.

We have secured excellent quarters in the center of the business district, and hold daily meetings, besides meeting socially in the restaurant connected with the Exchange.

I thank you for your kindness in placing your columns at my disposal, and shall be glad to reciprocate by answering any queries you may desire answered, so far as I may be able to do so.

Sincerely yours,

FRANK L. STRONG.

Manila, P. I.

### RUSSIA AND AMERICA.

Their Competition in European Grain Markets.

When talk of a commercial combination of European nations against the United States becomes more than usually active it is customary on this side of the water to point to the dependence of some of those nations upon the United States for their food supplies. In this connection a point made by Mr. Ernest L. Harris, United States agent at Eibenstock, is worthy of consideration. He believes that the future prosperity of the American farmer depends upon ability to sell our surplus cereals to other countries, especially Germany, with its 56,000,000 population, and that Russia is a powerful competitor in the German grain markets, with which the United States will be able to compete successfully in the future only by securing cheaper ocean freight facilities. He presents figures showing that Germany imported in 1897



grain to the value of \$58,636,616 and from the United States \$31,334,206, and that these imports in 1900 were valued at \$47,944,340 from Russia and \$42,997,690 from the United States. He adds:

"It will be seen that Russia sold Germany, in 1897, grain to the value of \$27,302,410 more than did the United States. In 1900, however, the United States had reduced this excess to \$4,947,250. In 1900 the total grain imports from all countries into the German Empire amounted to \$126,284,972. Germany, on the other hand, exports small quantities of grain to countries like Great Britain, Holland, Denmark, Norway and Sweden. These grain exports during 1900 amounted to \$16,610.

"The competition between Russia and the United States to supply the non-producing grain countries of Europe will become sharper every year. The building of new railroads and canals in Russia will enable that country to move her crops toward the German frontier much more easily than has hitherto been the case. Within ten years Austria expects to have a network of canals finished which will completely revolutionize the grain traffic of Austria-Hungary and the Balkan States. It is difficult to realize that barges of grain may be moved without transfer from the navigable waters of the Vistula and Dniester through the River Oder into the Upper Elbe to the grain markets of Prague and Dresden; that the same is true of great cargoes of barley, corn, rye and wheat from the countries of the Lower Danube. It will certainly give these countries an advantage in freight rates."

#### Machinery in Central America.

In a letter to the Manufacturers' Record Mr. J. Crawford of Managua, Nicaragua, writes regarding a recent canvassing trip through Salvador, Nicaragua and Costa Rica as follows:

"The prospect in these States is that the present growing crop of coffee to be gathered and exported in 1901-1902 will exceed in quantity the combined crops of 1899-1900 and 1900-1901; therefore, the people look forward to a greatly improved financial condition in a few months. The estates in coffee have usually a full supply of machinery, but the price of coffee has been so low, without prospects of an advance, that the people are turning their energies into cultivating rice, yucca for starch, textile fiber plants, of the gossypium, the agave and the banana families. All machines desired in these countries at present are in most instances of small size, from one man power to six horse-power. A great difficulty in the way of selling machinery in these States is the absence of banks of sufficient capital with so little money among the people that to forward cash with orders and to wait from three to four months before getting the machine to work on their estates is a heavy load, especially when we consider the fact that money pays from 2½ to 3 per cent. a month in these countries. If our manufacturers would ship from the United States on written orders from responsible parties c. o. d., and empower me to sell them to some one else at invoice c. i. f. price if not paid for by the party who ordered within ten days after arrival at the port of destination, I could sell much more machinery than at present."

#### Steamships from New Orleans.

The Illinois Central Railroad Co. has issued a schedule of steamships sailing from New Orleans for the months of September and October. It is notable that the Radcliffe line begins service in connection with the railroad; also a schedule for Genoa, Italy.

## RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

#### A 226-Mile Contract.

Although the Southwest has been notable within the last two or three years for extensive railroad construction and the number of large contracts which have been let, work has recently begun on a line which represents over 200 miles. This is what is termed the Arkansas & Choctaw Railroad extension. The Arkansas & Choctaw at present is a comparatively unimportant line in operation between Texarkana, Ark., and Arkinda, in the same State, a distance of forty-six miles. It is owned by a syndicate of Kansas City and St. Louis capitalists, of which R. H. Keith is president. Mr. Keith is also interested in another railroad being built in connection with coal mines in Northern Texas. It is understood that the Arkansas & Choctaw has become closely associated with one of the Southwestern systems which is back of the plan to extend it. The total length of the extension is estimated at 226 miles, and the contract has been let to Messrs. Johnson Bros. & Faught, one of the principal contracting firms in the Southwest, and who recently completed an extension of the St. Louis & San Francisco system from Sapulpa, I. T., to Sherman, Texas, 207 miles. The contract of the Arkansas & Choctaw calls for its completion as soon as possible. It will be built from Arkinda to a point on the Red river in Texas. When completed it will probably be operated as a portion of one of the Gould systems.

#### English View of the Southern.

The report of the Southern Railway has aroused much interest in British financial circles. In a recent issue of the London Statist the report is commented upon as follows:

"In seven years the mileage of the company has increased about 50 per cent.; its gross earnings have nearly doubled, and its net earnings have increased by 140 per cent. Moreover, its outlook continues promising. The cotton crop in the current year is likely to be a large one. Further, an increasing number of mills and factories are springing up on the company's line, and its earnings from carriage of manufactured products are likely to steadily increase. Its passenger receipts also are an important matter, as it serves favorite winter resorts and carries a large number of passengers from the North to the Southern States. It will also be appreciated that when the company's line has been further improved the working ratio may be reduced considerably beneath 70 per cent., and that there is consequently a latent power of profit in the road which lines working at a lower ratio do not possess. The company has now attained to the position of earning a considerable surplus in excess of the sum required to pay the full dividend upon its preferred stock."

#### Dallas to Fort Worth.

The company building the electric line which will connect the cities of Dallas and Fort Worth, Texas, is making rapid progress. Rails have been received for a considerable portion of track, and a contract has been let for the power-house. The station will furnish the necessary electric current, and it is estimated will cost \$250,000. It will communicate power to two substations to be built near each terminal point. It is expected to have the system in operation by December 1. The road will be thirty-two miles long,

and is being built partly by Cleveland (Ohio) capitalists. George T. Bishop at Fort Worth is president of the company.

#### Southern Pacific Improvements.

The Southern Pacific has recently purchased fifty chair cars of the latest pattern, which will be used between New Orleans and San Francisco. Other recent orders for rolling stock include 500 tank cars, 400 coal cars, 1000 flat cars and about 2000 box cars. It is also having constructed in its shops at Algiers and Sacramento 1000 additional flat cars.

#### Addition to the Fleet.

A dispatch from Savannah is to the effect that the steamship Grand Duchesse is to become one of the fleet of the Ocean Steamship Co. permanently, and that arrangements have been made to purchase her. She will be placed on the route between Savannah and New York after a number of improvements and alterations have been made.

#### Land for Terminals.

A dispatch from Richmond, Va., announces that the Seaboard Air Line has secured 108 acres of land fronting on the James river near Richmond, which, it is understood, will be used for terminals. The property is upon deep water, especially suitable for the construction of docks and warehouses.

#### To Use Southern Coal.

The Ocean Steamship Co. operated in connection with the Central of Georgia Railway will make a test of coal secured from the mines along the Chattanooga, Rome & Southern division of the Central system. If the result is satisfactory a coaling plant will probably be erected at Savannah for the benefit of these vessels.

#### Important Extension.

A dispatch from New York states that work has begun upon an extension of the Norfolk & Western system between Bristol, Tenn., the present terminus, and Knoxville. The estimated distance is 106 miles.

#### Railroad Notes.

A dispatch from Atlanta, Ga., is to the effect that the Hon. W. J. Northen may be offered the position of railroad commissioner for that State.

The Missouri, Kansas & Texas Railroad Co. has determined to construct a roundhouse at Greenville, Texas, which will be 72x250 feet in dimensions. A machine shop, a repair shop and other buildings will also be built.

Four additional branch lines operated in connection with the Plant system of railways have been absorbed in the consolidation plan recently carried out under the title of the Savannah, Florida & Western. They are the Ashley River, Green Pond, Walterboro & Western, the Abbeville Southern and the Southern Alabama railroads. This practically completes the consolidation.

A dispatch from Humboldt, Tenn., is to the effect that J. F. Hardesty of Rowlesburg, W. Va., has been in the vicinity of Humboldt recently in the interest of Northern parties, who desire to invest in farming property in that section of the South. It is stated that possibly \$250,000 may be invested in this way.

Sales in the Joplin (Mo.) district during the eight months ended with August were 174,859 tons of zinc ore and 23,165 tons of lead ore. In August the sales were 20,167 tons of zinc ore and 3406 tons of lead ore, valued in all at \$702,300.

## TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

#### ITS VALUE PROVED.

Cotton Growers Benefited by the Round Baling System.

[Cotton Ginner's Journal.]

The cotton season of 1901-1902, now just opening, will, in our judgment, have some pivotal phases as to determining the relative value, to cotton-growers, of rival systems of preparing cotton for market. We are, further, firm in the belief that the developments of this season will go far toward convincing growers that in compression at the gin the grower finds the greatest measure of convenience, utility and profit. Compression at the gin is, as most of our readers understand, the round-bale system. Plants for putting up cotton in that form were in existence six years ago, but they were the pioneers and so few in number that, strictly speaking, they were experiments and did not attract more than cursory notice. Even up to the opening of the season of 1898-99, three years ago, there were not exceeding 100 of these plants in all the South. It was not until two years ago that they were numerous enough to begin to make their influence felt. Involving so much of change, challenging deep-rooted and long-established methods, it is wonderful that the new system has made as great progress as it has. It has had to fight its way inch by inch, combatting prejudice, misrepresentations, misconception and ever facing that most powerful rival force, the square-bale compress interest. Legislatures have harassed the round bale; judicial decisions have been invoked to hamper it, and there was a time when hardly a newspaper would accord it fair consideration and hearing. It had to prove its right to exist or go down, and all because it was an evolutionary development, that proposed to supersede old methods, which were strongly supported, and the masses did not fully comprehend what it portended. Many of the best-intentioned and intelligent men in the South viewed it with distrust and unfriendliness.

But three years have done much to familiarize cotton-growers and the public generally with the new system. The cry of "wolf" raised against it so often and vigorously does not arouse the public now. The cotton-grower, the man of all men it essayed to advantage, has had opportunity to find out what it means for him, and the result is fair and even friendly judgment. A round-bale gin plant has come to be a familiar sight in all the cotton States, and, what is more to the point, a welcome sight, for wherever the system is in operation growers are assured of more vigorous competition in buying and merchants reap trade benefits. Communities that gave the round bale "the marble heart" four or five years ago give it the "glad hand" now and hold out inducements to secure it. It is human nature exemplified, this change of attitude and sentiment, and not at all surprising. The new system was misrepresented and antagonized by certain interests because it challenged their supremacy and proposed to divide business with them. It was distrusted by the mass of cotton-growers

because they were told it meant a monopoly of cotton handling, wielded by a "trust." It was discredited and opposed by most of the cotton ginners because they feared immediate overthrow of their business and investments. The square-bale ginner does find active competition in preparing his cotton for market, but he also finds that he can still operate his square-bale plant if he is alert and industrious. In short, the round-bale system has brought healthy, active competition in preparing cotton for market, and in that way benefited the cotton-grower materially. Its economies are so potential that in time compression at the gin must unquestionably supersede the older method, but the change is gradual and not violent. Intelligent people in the cotton States no longer talk of "trusts" and monopolies when considering the new system, and it stands where it ought to stand—purely on its merits, and a secure and solid footing it is. The people with whom it has to deal know it now, know its advantages, realize that its dangers (of which they heard much) never did exist, and as sensible people they accord it its fair share of business and as much of esteem as the old system enjoys. That is human nature, too, and the question has adjusted itself in an essentially natural way and along healthy, logical lines.

Something over 500 round-bale plants stand in the cotton States ready to do business this season. Something over 20,000 square-bale gin plants are ready to do business, too, and all will get some business, competition playing its part in deciding the ratio. But when the season is over we think it will be seen that compression at the gin will have made material progress. The cotton yield is going to be much less than was anticipated sixty days ago, and the struggle to handle cotton is bound to be more vigorous than would otherwise be the case. Grain harvests are far less abundant in the cotton States this year than last, notably as to corn, and the farmer will look to cotton as his chief resource. In the economies of the round-bale system the cotton-raiser will find much to advantage him this season, and he may be trusted to recognize and appreciate an agency that is practically helpful to him. It is, of course, simply impossible at this stage to estimate what proportion of the South's crop will be marketed in round bales, but no matter what this ratio may be the value of gin compression, as a system, will be felt and recognized. The economies of the system are real and far-reaching, and the result cannot be otherwise than to advantage the grower, for the savings are divided with him.

#### New England Manufacturers.

The seventy-first semi-annual meeting of the New England Cotton Manufacturers' Association will be held at Niagara Falls, N. Y., on September 25 and 26. The program will include an informal reception at Buffalo by the officers of the Pan-American Exposition and a visit to the plant of the Niagara Falls Power Co., where the water-power of Niagara is converted into electricity for industrial and commercial purposes. Papers may be expected on the relation of manufacturing industries to national position and progress, the past, present and future of the cotton industry of Japan, the Niagara Falls power plant, the cotton fiber in some of its phases, the round bale at the mill, overworking of cotton in the card-room, cotton waste, knitting of cotton yarns, recent developments in the Northrop loom, the evolution of the slubbing frame, thread boards and guides, the abuse of oils in cotton mills, steel forgings

for factory engines, early Southern cotton mills, the possibilities of trade expansion in cotton manufacture, and modern boiler problems.

#### Textile Notes.

The Savannah (Ga.) Board of Trade is considering plans for inducing Northern cotton manufacturers to locate mills at Savannah.

Gonzales (Texas) Cotton Mills, a new plant, is about to contract for the erection of twenty operatives' cottages and a warehouse.

Broadus Cotton Mills of Stevenson, Ala., reported organized with \$50,000 capital recently, has let contract for erection of its buildings.

The citizens of Carrollton, Ala., have started a movement for the organization of a company to build cotton factory, and John T. Cochrane is said to be interested.

Harmony Grove (Ga.) Mills has let contract for doubling its present plant of 4160 spindles and 156 looms. Announcement of this intention to enlarge was made recently.

It is rumored that the Ashley-Bailey Company of Paterson, N. J., now operating a silk mill at Fayetteville, N. C., will build another silk mill in the last-named town.

Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, in his annual review of the cotton crop for 1900-1901, gives a total of 10,283,422 bales, valued at \$497,567,549.

The Eastman (Ga.) Cotton Mills is proceeding steadily with the construction of its plant. This is a \$100,000 company, and its equipment is to be 5000 spindles, with room for duplicating this number.

Waxahachie (Texas) Cotton Mills has commenced to run on double time in order to supply the demand for its product. The company shipped a carload of sheeting to Oregon last week. This is one of the new Texas mills.

Liberty (S. C.) Cotton Mills has installed and put in operation a portion of its machinery, the carding and spinning departments being now running. Two hundred looms are in place. The spindles will number 10,000.

Roswell (Ga.) Manufacturing Co. will construct a new stone dam to increase and improve its water-power plant. Messrs. Collier & Brown, 112 English-American Building, Atlanta, are preparing the plans and specifications.

That there is some truth in the rumors current regarding the erection of a cotton factory on the Catawba river near Hickory, N. C., is evidenced by Capt. J. M. Odell's reference to the plant. Writing from Concord Captain Odell says: "Have not yet decided to build."

L. A. Vaughn of Winston-Salem, N. C., reported recently as to establish knitting mill, states that plant will be conducted under the title of Vaughn Knitting Mills. A four-story building 50x100 feet has been secured and twenty machines are being installed for manufacture of women's fine ribbed underwear.

The knitting plant at Bowling Green, S. C., reported last week, will be known as the Bowling Green Knitting Mills. The mill building will be 60x100 feet, with addition for boiler and engine house. The investment will be \$15,000. Underwear and gloves will be manufactured. R. M. Dulin is managing the enterprise.

The Pennant Knitting Co. of Philadelphia, Pa., mentioned last week as having removed its plant to Shepherdstown, W. Va., employs about fifty operatives and manufactures seamless ribbed hosiery. The purchase of a 10-horse-power steam

or oil power plant is now being negotiated. Manufacturers are invited to submit prices on second-hand equipment.

The Anderson Cotton Mills of Monticello, Ark., reported last week, has permanently organized with the following officers: President, T. H. Matthews; secretary, J. G. Williamson; treasurer, J. J. McCoy, and W. N. Brown, superintendent. Arrangements for mill and equipment are now being made, and the superintendent is asking for prices on sprinkler system with two 10,000-gallon tanks.

Bannockburn Mills of Middleton, Ga., announced last week, plans to erect a building two stories high, 60x204 feet in dimension. It is proposed to use two sets of wool-spinning machinery, consisting of about 2000 spindles. This equipment would produce 1000 pounds of filling yarns in ten hours, which amount of yarns would keep 100 looms in operation, each producing thirty yards of medium-grade cottonades. The initial investment will be \$80,000, and the stockholders are expected to meet soon for the election of officers. J. H. Bromley of Philadelphia, Pa., will be chief officer.

An improvement costing between \$20,000 and \$25,000 in the New St. Charles Hotel at New Orleans will conduce to the comfort and pleasure of the traveling public. The open space on the second floor of the hotel, between the south dining-room wing and the north parlor wing, and commonly known as the roof-garden, is being enclosed in glass, and when finished it will serve many purposes, as it can be used as a ballroom, a banquet hall, etc. The space enclosed is about 100x65 feet. It will be covered with opaque glass in steel frames, and will be handsomely illuminated and furnished. The colonnade fronting St. Charles street will still retain its open front, so that guests may enjoy a sun bath or an open-air promenade at their pleasure.

The Ladies' Home Journal for September is its "Special Autumn Fashion Number." In addition to an unusual number of interesting stories and striking features, it devotes seven pages to a complete setting forth of the styles-to-be in dresses, bodices, hats and wraps. The most important literary feature, perhaps, is the initial instalment of "Miss Alcott's Letters to Her 'Laurie'"—letters which have never before been printed. They are edited by "Laurie" himself—now grown up. There is a delightful description of a day in the woods with Ernest Seton-Thompson, and a jolly recital of "The College Scrapes We Got Into," by "A Graduate."

The permanent investments in Durham, N. C., during the year ended with August in the way of building represent \$1,070,050, divided as follows: Manufacturing enterprises, \$722,000; twenty-six business houses, \$84,350; church and school property, \$126,000; new residences, fifty-six, \$28,300; 239 tenement-houses, \$108,050.

It is announced that Winston & Co., the well-known firm of Virginia contractors, have been awarded a contract of \$500,000 for the construction of about three miles of aqueduct for the metropolitan water board of Boston.

A plant to enamel iron is being constructed by the Cahill Iron Works of Chattanooga, Tenn. It will make porcelain bathtubs and kitchen furniture on a large scale.

The Tobacco Association of Danville, Va., has elected Mr. C. H. Hickey, president; Mr. E. K. Jones, vice-president, and Mr. I. S. Bendall, treasurer.

## COTTONSEED OIL.

This department is open to the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

### EUROPE AND COTTONSEED.

#### Overcoming Difficulties in Exporting the American Product.

It is a well-known fact that Europe scours the world continuously for oleaginous seeds. All the exportable seeds of any kind from any country are quickly taken up and brought to the European mills to be converted into manufactured products. Rapeseed, linseed, poppyseed, gingellyseed, peanuts, cottonseed from Asia-Minor, Egypt, Brazil, Peru, our Sea Island, all are shipped, and such crushing mills as exist in the countries of their origin aim to supply local consumption only, they exporting little or no manufactured oil or cake.

When it is known that the United Kingdom alone (figures for the whole of Europe are not at hand) imports yearly a quantity of raw seeds of all kinds about equal to one-third of the total crush of cottonseed in the United States, which is said to amount to a little less than 3,000,000 tons, it is plain that some potent reasons, some great advantages, must exist for this condition of affairs, and that all these countries find it more profitable to export to Europe the raw seeds than to manufacture them and export the oil and meal.

The American and Indian woolly cottonseed alone seem to be exceptions, and in the case of the American seed it is manufactured at home, but about one-half of its output in oil and two-thirds in cake or meal is exported to Europe.

This is not due, however, for want of attempts to export it—many such have been made and failed—but to the fact that nature covered these seed with a coat of short fiber quick to absorb moisture and create heat, furnishing thereby the needed elements to rot the cottonseed in short order. The exportation of them is thus practically prohibited, since, when shipped in this woolly state, they generally spoil during the trip and generally arrive in Europe fit only for fertilizers. Yet the incentive to bring the seed to Europe is so great that in very dry seasons the risk is taken and shipments of these seed are made, notably this year, when France took large quantities of Indian cottonseed the whole winter and spring, and Liverpool and Hull also took several big consignments, with Germany importing trial shipments this summer.

By a glance at the accompanying table it will be seen that for nine months of the season just closed the products of a ton of cottonseed in Europe were worth on an average \$11.40 per ton more than they were in America. It will also be seen that for the same time the delinted cottonseed derived from an American ton of woolly seed was worth in Europe an average of \$9.42 more than this ton of seed was worth in America. These figures will hold, proportionately with small variations, for any other period. It is small wonder that all manner of delinting processes, mechanical and chemical, have been invented and tried. For various reasons, all but one have fallen through and been abandoned. This latter process seems to have solved the problem successfully, and to remove nature's embargo on the exportation of our woolly cottonseed. It has stood the test of three seasons, two machines using it having delinted during that time 23,000 tons of woolly white seed, nearly 9000 of which were delinted and exported the past sea-



son. Europe absorbed these seed readily, they arrived at destination in perfect condition, were well liked, and are preferable to Egyptian seed, the American delinting seed containing the most oil and kernel and having a softer hull, thereby making a more friable cake.

It will thus be seen that Europe will buy, at very remunerative figures, any amount of American cottonseed that may be delinted and exported.

This view will be strengthened by a study of the attached figures and the knowledge that the cost of delinting cottonseed in a well-regulated delinting plant can be covered by the value of the linters and fiber derived from the operation.

DATE.	Price of seed at mill.	Freight to Hull.	Price of seed c. i. f. Hull.	Value of oil & meal at home mills.	Value of oil & meal at Hull.
Oct. 1, 1900.	\$17.00	\$5.60	\$22.61	\$18.50	\$31.79
Nov. 1, 1900.	15.00	5.60	20.61	17.50	30.02
Dec. 1, 1900.	14.00	5.60	19.61	17.70	28.57
Jan. 1, 1901.	14.00	5.60	19.61	16.30	28.11
Feb. 1, 1901.	14.00	5.60	19.61	16.70	28.32
Mar. 1, 1901.	15.00	5.60	20.61	15.20	26.59
Apr. 1, 1901.	16.00	5.60	21.61	17.35	27.63
May 1, 1901.	16.00	5.60	21.61	17.05	28.14
Jun. 1, 1901.	16.00	5.60	21.61	17.50	28.20
Average	\$15.22	\$5.60	\$20.82	\$17.18	\$28.58

#### EXPLANATION TO TABLE.

<sup>1</sup>Freight on date named, from delinting plant to Hull, is on the amount of delinted seed derived from a ton, 2000 pounds woolly seed.

<sup>2</sup>Value c. i. f. in Hull on the date named of the amount of delinted seed derived, on an average, from one ton, 2000 pounds, woolly seed, at \$4.85 to the pound.

<sup>3</sup>Value at American mill of the prime oil and meal manufactured out of a ton of woolly seed (40 gallons prime oil and 750 pounds prime meal allowed).

<sup>4</sup>Value of the oil and meal derived by English mill out of the delinted seed made from a ton (2000 pounds) woolly seed (336 pounds), oil and (1450 pounds) meal at \$4.85 to the pound.

R. DERDEJN.

#### Cottonseed-Oil Notes.

The Wharton Cotton Oil Mill Co. of Wharton, Texas, has set September 10 as the initial day when its mill will commence the crushing season.

All the machinery in the new cotton-oil mill at Wadesboro, N. C., has been put in position, and the plant will be ready to begin work as soon as the company can get a supply of seed.

The Farmers' Oil Works of Helena, Ark., a plant having a capacity of forty tons, was sold on the 28th ult. by order of court. The mill brought \$21,750, and was purchased by E. H. Ferguson of the Kentucky Refining Co.

The market for cottonseed products in Texas has ruled quiet during the past month, with oil values nominal at interior points. Cottonseed cake and meal is in demand for export, and is quoted at \$21 to \$21.50 per ton delivered at Galveston.

The repairs having been completed and the machinery put in good working order, the Victoria Cotton Oil Co. of Victoria, Texas, under the new management of Messrs. Wilder & Rathbone, is now running at its full capacity. Preparations are under way for the use of Beaumont oil as fuel. Tanks have been erected, burners ordered, and it is said that oil will be in use by October 1.

The following are official quotations on cottonseed and cottonseed products as posted at the Cotton Exchange in New Orleans on the 2d inst.: Prime refined oil in barrels, 36 to 37 cents per gallon; off refined oil in barrels, 35 cents per gallon; prime crude oil, loose, nominal per gallon; prime cottonseed cake, \$24 per ton of 2240 pounds; off do., nominal; prime cottonseed meal, \$23.75 per ton of 2240 pounds; off do., nominal; soap stock, loose, 1 cent per pound; linters, per pound, choice, nominal; A, nominal; B, nominal; C, nominal; cottonseed in sacks delivered in New Orleans, \$10 per ton of 2000 pounds; in bulk delivered in New Orleans, nominal per ton of 2000 pounds.

## PHOSPHATES.

### Phosphate Markets.

Office Manufacturers' Record,  
Baltimore, Md., September 4.

The local phosphate market has shown no material change during the past week with the exception of a firmer tone to Tennessee rock on recent reports in regard to consolidation of interests at Mt. Pleasant. Local brokers have been bid \$3 for Mt. Pleasant 78 per cent. rock. Florida and South Carolina rock are both very steady. The only charters reported for the week were the British steamship Sanda, 1405 tons, from a Southern port to United Kingdom or Continent with phosphate on private terms, and the British steamship Roehampton, 1391 tons, from Fernandina to Ghent with phosphate at 13/6, September. The situation in Tennessee phosphate circles is much improved as the deal in organization progresses, and prices at Mt. Pleasant during the past week are all decidedly firmer at \$2.40 for 78 per cent. rock, \$2.75 for 75 per cent. and \$3 to \$3.25 for 78 per cent. The properties which have been optioned to the promoters of the deal that have so far been prospected are showing up as well or better than expected. The demand for export rock at Mt. Pleasant is good, and holders of rock are not disposed to sell except at outside figures. Considerable shipments are about to be made to the domestic trade. Shipments of Tennessee rock from Pensacola for August amounted to 13,728 tons, all foreign trade. In South Carolina the market is in better shape, with the output reduced by recent foreign shipments. Prices in Ashley river are steady and unchanged. The situation in Florida, while showing no new features, remains satisfactory, and miners are generally working their plants up to their full capacity, both in land rock and pebble districts. There has been some demand from foreign sources, but considerable business has been closed for 1902, and holders are not anxious to do further business at present values. Shipments from the Florida ports for August have been moderate.

#### Fertilizer Ingredients.

The tone of the market for ammoniates has ruled very quiet during the past week, with a limited volume of business. Western packers are offering in moderate lots, and while stocks have been accumulating, prices so far are maintained and holders are not anxious sellers at present prices. Messrs. Thos. H. White & Co. in their August circular review the market as follows: "Ammoniates during August were dull, buyers showing no interest at producers' prices. Notwithstanding the fact that Western producers wisely refrained from pushing the sale of their products, prices at the close of the month show a decline throughout the list. The fish catch continues large, and is freely offered on basis of \$2.15 to \$2.20 and 10 Baltimore and Norfolk."

The following table represents the prices current at this date:

Sulphate of ammonia (gas)....	\$2 70 @ 2 72 1/2
Nitrate of soda, spot Balto....	1 55 @ 1 50
Blood .....	2 22 1/2 @ 2 25
Azotine (beef).....	2 35 @ —
Azotine (pork).....	2 35 @ —
Tankage (concentrated).....	2 17 1/2 @ 2 20
Tankage (9 and 20).....	2 20 @ 10 1/2 @ 2 30 & 10
Tankage (7 and 30).....	20 00 @ 21 00
Fish (dry).....	27 50 @ 30 00

#### Phosphate and Fertilizer Notes.

Shipments of Tennessee phosphate rock from Pensacola for the month of August amounted to 13,728 tons, all foreign.

The schooner Anna L. Mulford cleared last week from Charleston, S. C., for Barren Island with a cargo of 812 tons of phosphate rock. The total coastwise

shipments of phosphate rock from Charleston for the year ending August 31, 1901, amounted to 39,523 tons, against 72,303 tons last year.

The Austrian steamship Abbazia from Tampa, Fla., with 2200 tons of phosphate rock in transit for Venice, arrived last week at New Orleans to complete cargo.

The improvements noted in last week's issue of the Manufacturers' Record as under construction at the plant of the Imperial Fertilizer Co. at Money Point, Norfolk, should have been credited to the Imperial Company.

It is stated that the Virginia-Carolina Chemical Co. will make a very large and interesting exhibit at the Charleston Exposition. The company proposes to make a live exhibit with cottonseed oil in competition with olive oil.

The Singer Fertilizer Co. of Nashville, Tenn., has secured the contract to furnish 350 tons or twenty-five carloads or more of fertilizer to a club of farmers in Simpson county, Kentucky. The deal was closed last week at Franklin, Ky.

The Tennessee Valley Fertilizer Co. of Florence, Ala., has been chartered, with a capital stock of \$20,000. The incorporators are Lee Ashcraft and John T. Ashcraft of Florence, Ala., and T. C. Meadors and John W. Fry of Columbia, Tenn.

It is reported that the Virginia-Carolina Chemical Co. will erect a large fertilizer plant at Gainesville, Ga., to be operated in connection with an oil mill at that place. A 25-acre tract of land has been purchased, and upon this site the plant will be built.

The phosphate shipments from the port of Punta Gorda, Fla., for the month of August amounted to 2665 tons foreign; amount previously reported 33,220 tons, making a total for seven months of 35,885 tons, of which 18,790 tons were foreign and 17,095 tons domestic.

The receipts and shipments of cottonseed products from the port of New Orleans for the year ending August 31 are given as follows: Receipts of oil, 279,462 barrels; cottonseed cake, 370,318 sacks, and meal, 354,512 sacks; shipments of oil, 349,200 barrels; cottonseed cake, 855,542 sacks, and meal, 1,400,324 sacks. The eight cotton mills of New Orleans crushed about 75,000 tons of seed during the year, paying for same from \$10 to \$19. The New Orleans Picayune, in reviewing the market for the year, says: "Cottonseed products found a ready market, and the range of prices for the various products was relatively higher than the previous season. Cottonseed meal sold at from \$22.40 to \$24 per long ton, and cake at \$22.25 to \$22.45. Cottonseed oil ranged from 27 to 30 cents per gallon for crude loose, while refined sold at 32 to 34 cents loose. Linters ranged from 3 to 3 1/2 cents per pound."

The exports of cottonseed products from the port of Galveston, Texas, for the year ending August 31, 1901, were as follows: Cottonseed cake and meal exported to the United Kingdom and continental ports 481,749,531 pounds, valued at \$4,861,043, against 432,104,874 pounds, valued at \$4,162,942, in 1899-1900; cottonseed oil 5,004,747 gallons, valued at \$1,518,127, against 7,277,933 gallons, valued at \$2,183,446, in 1899-1900.

At a meeting of the board of directors of the Locust Grove Oil Mills at McDonough, Ga., it was unanimously decided to accept the proposition made by the Southern Cotton Oil Co. for the purchase of the property. The deeds for the transfer have been filed, the consideration being \$9000 and other valuable securities.

## LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

### TIMBER IN MEXICO.

American Railway Enterprise to Develop It.

In an interview in the Kansas City Star Mr. W. W. Sylvester, vice-president of the Kansas City, Mexico & Orient Railroad, referring to a telegram which he had just received reporting that the survey of 250,000 acres of timber-land concessions granted by the Mexican government had been completed, gives the following interesting information:

"The Mexican government granted to the Orient Railway 1,250,000 acres of land, heavily timbered with long-leaf pine and occasional patches of oak. The conditions of the grant are that not less than 250,000 acres of this land shall be surveyed and possession taken each year until the whole tract is taken, and that ten cents in gold an acre be paid. A large part of Mexico is a treeless plateau, but along the western coast, extending for about 125 miles east of the Gulf of California, there is a strip of pine and oak timber of fine quality. It is in this strip and adjoining the line of the railway that the concessions are.

"This timber land will yield 6000 to 10,000 feet of lumber to the acre. The company now has an offer for the purchase of this timber at \$2 per 1000 feet of stumpage. That is from \$12 to \$20 an acre, for which we have to pay ten cents. As showing the value of the concession, take this first 250,000 acres which has been surveyed. It will cost the company, at ten cents an acre, \$25,000; then the cost of survey is about \$7000, or \$32,000 all told. The timber on it at the offer we have will sell for \$3,000,000 to \$5,000,000. The profit on the whole tract of 1,250,000 acres will practically build the road.

"H. C. Kelly of Texarkana, a timber expert who has been with a corps of assistants for the past year going over the company's concessions in Mexico, will arrive in Kansas City some time next week. Mr. Kelly bought all of the timber on the land owned by the Pittsburg & Gulf Railway, now the Kansas City Southern. Mr. Sylvester says that the Kansas City, Mexico & Orient Railroad will probably be completed and in full operation in the early summer of 1904. 'Our chief engineer, Mr. Paret,' he said, 'makes a conservative estimate that puts it about a year later, but we are hopeful of completing the line within a period of two and one-half years from this time. We have only recently won a suit at Emporia, Kan., in which the Santa Fe tried to block our progress, and we anticipate no legal entanglements that will interfere with us.'"

### LUMBER MARKET REVIEWS.

#### Baltimore.

Office Manufacturers' Record,  
Baltimore, Md., September 4.

The local lumber market has shown a fair volume of business during the past week, and the indications are favorable for a good fall trade. There has been considerable demand from out-of-town buyers, and yardmen and boxmakers are buying more freely. The trade in North Carolina pine is steady, and there is a very substantial volume of business reported. Prices all along the line are very steady. Stocks at mills are not excessive, and the output is in keeping with the demand. White pine in a local way is firm, with a good inquiry and prices steady.



Cypress is showing up well, although sales are only moderate. The movement in the hardwood market is fairly active, with a good demand from furniture manufacturers for oak, and from car builders and wagon shops there is also a good inquiry. Prices continue to show a steady tone for all desirable material. Stocks of hardwood lumber at mills in West Virginia are not excessive, while the supply of logs is much larger than usual. Rumors of a combination of lumbermen are afloat to advance the price of logs in West Virginia by discontinuing timber cutting for one year unless prices advance in the meantime. Millmen in West Virginia and Ohio are disposed to ask outside figures for lumber, and at terminal points leading houses are also firm holders, especially prominent hardwood exporters. Shipments of hardwood from this port and Norfolk continue very light, and with the market weak and unsettled in Europe no immediate improvement is expected.

#### Charleston.

[From our own Correspondent.]  
Charleston, S. C., September 2.

The demand for lumber during the month of August in this section has been fairly active, with prices very steady as a rule for all standard grades. From Northern sources there has been a good inquiry, and mills are generally well supplied with orders for prompt and near future delivery. Freight rates are somewhat firmer, and the demand for desirable vessels for carrying lumber is more decided. The outlook generally for a good volume of business during the present month is very favorable. Last week the following shipments were reported: Schooner Bessie Whiting with 372,000 feet of lumber and steamer Apache with 22,425 feet, both for New York; steamship Seminole for Boston and New York with 5110 oak staves, and the following vessels with full cargoes for Boston: Schooners J. Edward Drake, 680,000 feet of lumber; Brookline, 418,000 feet, and T. W. Dunn, 456,740 feet. At Georgetown there is unusual activity, receipts of logs being heavy, mills are all running on full time, and both in cypress and yellow-pine lumber the shipments have been very heavy during August. The Atlantic Coast Lumber Co.'s steamers for New York and Boston took out last week about 2,500,000 feet of lumber. The Gardner & Lacey Lumber Co. is very busy, and has a good supply of both cypress and yellow-pine logs, while the company is making good shipments to the usual sources. The rates on lumber by coastwise vessels are unchanged.

#### Savannah.

[From our own Correspondent.]  
Savannah, Ga., September 2.

The commercial year just closed has recorded for this port a very substantial volume of business. With the great commercial advantages possessed by Savannah the year has developed wonderful improvement in commerce and industry. Her terminal facilities give her immense advantages, and her shipments for the year make a most creditable showing. The lumber industry of this port, which may be considered of primary importance, is at the moment showing some very encouraging features. The business of the year has been of a substantial character, with prices firm and hardening during the year. At the moment the demand for lumber is unusual. From railroads at different points numerous inquiries for timbers and crossties continue to be received, and on all sides there is a buoyant feeling in the market. At a meeting of the Georgia Saw-Mill Association, held last week at Tifton, it was shown that practically all the mills of the association were getting full list prices for lumber,

while some were selling at a slight advance. Prices on coastwise or timber lists have been advanced \$1 per 1000 feet, while the interior or dressed stock lists remain the same. Shipments of lumber, both domestic and foreign, during August from this port have been above the average, over 6,000,000 feet having left the port during the past ten days. While the outlook here may be considered bright for lumbermen, the same may be said of trade at the nearby ports of Brunswick and Darien; in fact, throughout the State the tendency both in the milling and building industries is toward an increased volume of business during the fall and winter months. The advance in freights is causing a demand for vessels, one firm here having chartered no less than thirteen vessels to carry lumber cargoes to Northern and Eastern ports. Last week the schooner Charles H. Valentine was taken to load lumber here for New York at \$5.75, option of New Haven \$5.87½, and the schooner John Rose to load here for Philadelphia with lumber on private terms.

#### Jacksonville.

[From our own Correspondent.]  
Jacksonville, Fla., September 2.

The month of August, as usual, has been one of only a moderate volume of trade in the various avenues of the lumber industry. The collector of customs reported the shipments for the month at 7,420,857 feet, of which 6,678,098 feet of yellow pine were coastwise, 375,000 feet of cypress and 367,759 feet foreign. Shipments of shingles were 1,520,000, and of crossties 39,020. The market generally shows quite a steady tone as to prices, and the demand at the moment is fair from all Northern points, while there is considerable lumber going into consumption in a local way. The Clyde Line of steamers are going out each trip with the usual consignments of lumber and other wood products, and from the slight advance in rates it is likely that September will make a much better showing in cargo shipments. All milling plants, both here and at adjacent sections, are running on full time, and are generally in receipt of good orders. Charters reported are schooner Montana, 337 tons, from Jacksonville to Philadelphia with dry cypress at \$5, and steamer Ethelbrytha, 1985 tons, from Jacksonville to Santiago with crossties on private terms.

#### Beaumont.

[From our own Correspondent.]  
Beaumont, Texas, August 30.

There have been few changes in the lumber market during the past week. Some lists have made their appearance, from which it is noted that all mills are asking higher prices. Dimension is being held firmly at \$15 by the first-class mills. Perhaps the biggest advance in price lately has been in the line of square edge and sound timber. There is no difficulty whatever in securing \$11 at the mill for 12-inch timber on the basis of the usual lengths, that is, up to twenty-four feet. There continues to be an extreme shortage in many items of lumber, particularly 2x4 18 and 24, on the common side. On the left-hand side of the list, star flooring and ceiling are perhaps in the shortest supply. The reports have not yet begun to come in of stock on hand for August, but it is thought there will be a great shortage shown. The shipments for August in this entire district will very probably exceed those for this month in any previous year. The demand for railroad material the past month has been something abnormal. The Western trade has been somewhat better the past week. There has been a particularly heavy demand recently for dimension, and quite a

little material of this class of business has been booked. The export business is very quiet at this time, and probably there is less lumber being exported from this section than has been the case since 1894. In Southern Louisiana mills have lately enjoyed a very good business. The rice crop is in splendid condition in that section, and the prediction is made now that even higher prices will be paid for the crop than were paid last year. This prospect naturally has a splendid effect on business. Mr. John Henry Kirby has not yet returned from New York, but it is learned from a reliable source that he has concluded the purchase of the Reliance Lumber Co., the Texas Tram & Lumber Co., the Beaumont Lumber Co., the J. F. Keith Co., Cow Creek Tram Co. and the Bancroft Lumber Co.

#### Lumber Notes.

The Brook Park Lumber Co. is building five dry-kilns at Enterprise, Miss., and will expend in the neighborhood of \$40,000 on its plant at that place.

The A. S. Thomas Furniture Co. of Columbia, S. C., has been chartered, with a capital stock of \$15,000. The incorporators are A. S. Thomas and John B. White.

The Bell Furniture Co. of Greensboro, N. C., has been incorporated, with a capital stock of \$1500. The incorporators are J. R. Bell, M. Vuncannon and E. P. Motley.

C. T. Ames of Nashville, Tenn., sold last week 14,000 acres of timber land in Tuscaloosa county, Alabama, to Cornelius D. Danaher of Chicago, Ill., for the sum of \$79,000.

The big planing mill at Siloam Springs, Ark., owned by E. T. Wisner, was destroyed by fire on the 26th ult. The loss is estimated at between \$10,000 and \$12,000, with no insurance.

It is stated that W. W. McCutchen has been granted by the Southern Railway officials the privilege of erecting a saw-mill, cedar mill and manufacturing plant on their property at Larkinsville, Ala.

The C. W. Robinson Lumber Co. of Meridian, Miss., has been chartered, with a capital stock of \$40,000. The incorporators are J. M. Broach, C. W. Robinson, John Kamper, W. H. Pickard and A. M. Cate.

The Roanoke Barrel and Stave Factory at Roanoke, Va., has closed a contract with a Northern fruit exporter for 75,000 No. 1 apple barrels to be used in marketing the apple crop in Roanoke and other counties.

The Atlantic Coast Lumber Co.'s steamers Georgetown and Waccamaw sailed from Georgetown, S. C., last week for New York and Boston, respectively, each loaded with about 1,500,000 feet of North Carolina pine.

The shipments of lumber from the port of Jacksonville, Fla., for the month of August amounted to 7,420,857 feet, of which 367,759 feet were foreign, 375,000 feet of cypress coastwise, and 6,678,098 feet of yellow pine coastwise.

The Robinson Point Lumber Co. held a meeting of its stockholders last week at Pensacola, Fla. Extensive repairs were decided upon, and Mr. Stevens, the new manager, expects to have the mill in running order by the middle of October.

The schooner Marie Palmer has been chartered to load at Ship Island, Miss., with 1,350,000 feet, mainly of yellow-pine lumber. This will, it is stated, be one of the largest cargoes that has ever left that port. The cargo goes to Philadelphia.

Large quantities of persimmon wood are now being marketed, taken from the forests in North Alabama. It is stated

that it is bringing almost as good a price as walnut. Shipments are being made to the United Kingdom and continental ports.

The Batchelor Cypress Lumber Co., whose plant at Panasoffkee, Fla., has been idle lately, will commence running again about the middle of the present month. The company is extending its logging road and otherwise improving its plant.

It is stated that the Atlantic Coast Line is about to construct a spur track at Petersburg, which will extend to the wharf on the Pocahontas side of the river. This will greatly facilitate the shipments of lumber, which during this year have been unusually heavy.

It is stated that the swamps on Salkehatchie river, South Carolina, are being purchased in the interests of Northern capitalists, who propose to manufacture its woods into lumber and shingles. Large sections of fine hardwoods abound in these swamps.

The shipments of sawn timber last week from the port of Mobile, Ala., amounted to 23,049 cubic feet of hewn timber, 45,364 cubic feet of sawn timber, and of lumber 1,778,151 superficial feet. The total shipments of lumber from Mobile for the commercial year ending August 31, 1901, amounted to 112,450,960 feet, against 142,081,086 feet for 1899-1900.

Mr. C. E. Dirmeyer, secretary of the Mechanics, Dealers and Lumbermen's Exchange of New Orleans, reports the receipts of building material at that port for the year ending August 31, 1901, and preceding year as follows: Lumber 207,344,635 feet, last year 180,786,005 feet; shingles 68,165,500, last year 56,888,250; laths 27,269,000, last year 21,192,000; oak staves 9,634,313, last year 12,368,610; cypress staves 3,750,889, last year 2,961,773.

The Georgia Saw-Mill Association held a meeting on the 27th ult. at Tifton, Ga. Over thirty-six mills were represented, and the meeting proved to be the most interesting of any held during the year. The general condition of the market was reported as steadily improving, and orders are offered in greater volume than can be handled. Prices on all coastwise manufactured material have advanced \$1 per thousand except in the interior, which remains the same. President H. H. Tift of Tifton, Vice-President William B. Stilwell of Savannah and Secretary Frank E. Waymer of Tifton were appointed a committee to visit and attend the meetings of the lumbermen during lumbermen's week at the Pan-American Exposition at Buffalo. The next regular meeting will be held at Tifton October 8 next.

The Mobile Register, in its annual review of the trade of Mobile for the commercial year ending August 31, 1901, says: "In nearly all line of trade Mobile has made steady advance the past year, and the main decrease being shown in the lumber and timber trade of the port, which shows a falling off of 53,000,000 superficial feet over the business of the previous season. This decrease is due to the falling off in the exports of lumber to Cuba, and also to the cessation of coastwise shipments due largely to the failure of the Hollender Line of steamships between this port and New York. The season of 1899-1900 was a phenomenal one in the lumber and timber trade of this port, due to the great demand from Cuba following the close of the Spanish-American war, but the trade of the past season, when compared with a year's trade done under normal conditions, shows an increase of 30,000,000 feet over that of the season of 1898-99."



## MECHANICAL.

## Electrical Appliances for Army Use.

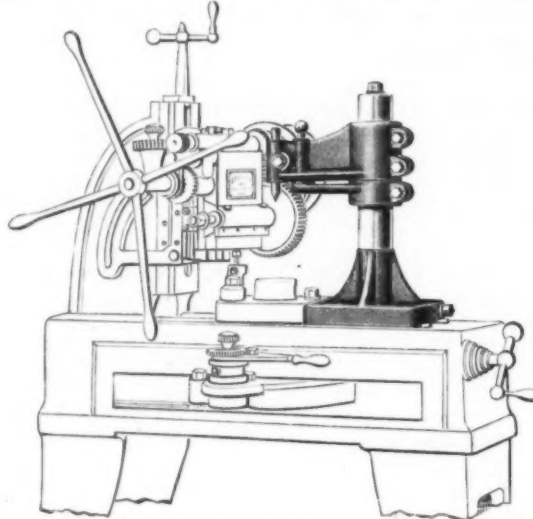
Many persons will be interested in reviewing the results of the various tests that have been made by the United States army engineers with the view to determining the most acceptable material to be used for standardizing the electrical equipment of the various fortifications. As is well known, work of this character is necessarily of the most substantial and solid variety, so as not to be damaged by gun fire in its neighborhood, which unquestionably causes severe vibrations, and it must also be as certain in its operations as it can be, because of the vital importance that it shall work when called upon to do so.

The accompanying illustration is made from a photograph of the sample board made up for Lieut. R. R. Raymond of the United States army engineering office at Boston. Upon the board are represented a number of the different electrical appliances, tested and accepted by the government, for use in all of its fortifications on the New England coast. The type and different apparatus that has been selected, after the experiments and trial for this important purpose, follows:

1. Rubber gasket, 1-16 inch thick,  $3\frac{3}{4}$  inches diameter, for use on a junction or switch box.
2. Rubber ring for neck of lamp.
3. Galvanized iron-pipe clip.
4. "Evans," style 18, expansion bolt,  $\frac{1}{4}$  inch by  $\frac{3}{8}$  inch.
5. "Loricated" conduit elbow,  $\frac{3}{4}$  inch.

the wooden block is shown in Fig. 23.  
9. Hard rubber base for use in attaching receptacle No. 7 to iron box.

10. Concrete block which shows in section the manner in which the conduit, lamp box, junction box and switch boxes are installed in concealed work. All of the conduit work is in place before the concrete is put on the ceiling.



ARBOR SUPPORT ON WHITON GEAR MACHINE.

11. Junction box complete.
12. Lamp box complete with lamp and guard.
13. Switch box complete.
14. Conduit coupling,  $\frac{3}{4}$  inch.
15. "Loricated" conduit,  $\frac{3}{4}$  inch.
16. Rubber gasket for lamp box.

places. Wires enter lamp in separate tubes.

20. Iron plug to close holes in boxes not required.

21. Wooden block (or form) for use in concealed work to make a recess as shown in Fig. 10.

22. Circuit wires of different colors (black and white). The shells of the re-

ceptacles are all connected to one color, and the inside contact to the other color; in this way it is impossible to get a short circuit in changing lamps, as all of the shells of all lamps have the same polarity.  
25. Section of wooden block (Fig. 21) used as a form for concealed work.

"The photometric test of lamp will be made at 110 volts by revolving them at not less than 200 revolutions per minute with axis vertical to obtain their mean horizontal intensity, with axis inclined 45 degrees to obtain their mean spherical intensity, and with axis inclined 90 degrees to obtain their vertical intensity. No lamp, under these conditions, shall show less than 15 C. P., nor more than 17.5 C. P., mean horizontal, nor less than 13 C. P., mean spherical, nor less than 10 C. P., vertical intensity.

"Filaments must be properly placed in the middle of the bulbs, and must not drop when turned horizontal during any portion of their life.

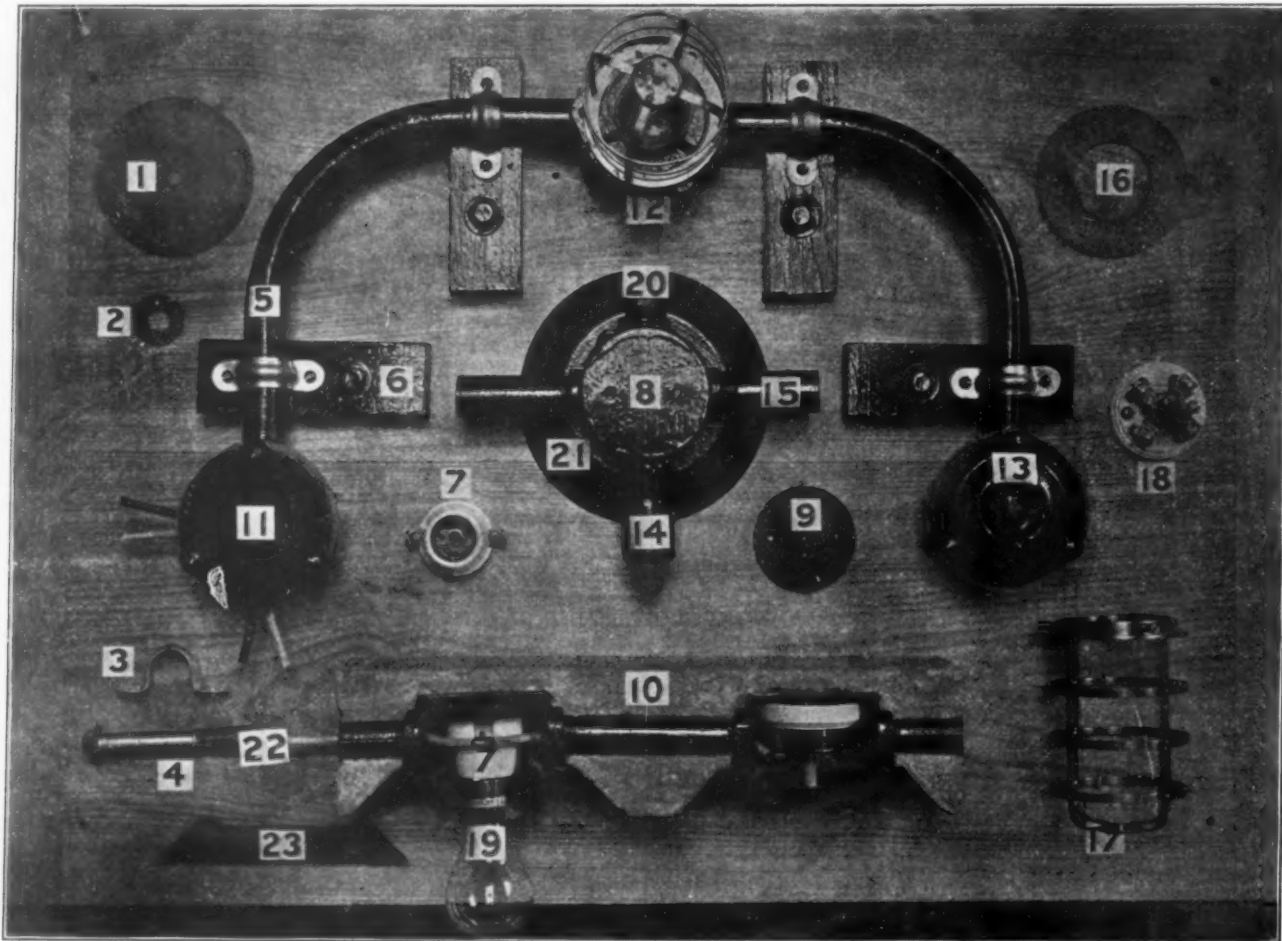
"Anchored filaments will not be considered.

"Bulbs must be uniform in shape and size, of molded lead glass, or equal, and free from defect.

"Tipless bulbs are preferred.

"The letters U. S. shall be etched upon each bulb in such a manner that they cannot be removed."

It is stated that while probably few manufacturers using incandescent lamps are in position to make tests of the mean spherical candle-power, it might be well to consider carefully the advantages of vertical candle-power, for as rays of light travel in direct courses, and as the lamp is invariably located above the object it is desired to make visible, it can be readily seen that the vertical or useful light of the lamp is of the greatest importance.



SAMPLE BOARD OF ELECTRICAL DEVICES, TESTED AND APPROVED FOR U. S. GOVERNMENT FORTIFICATIONS.

6. Cedar cleat,  $5\frac{1}{2}$  inch by  $1\frac{3}{4}$  inch by 1 inch.
7. Porcelain receptacle (General Electric No. 9171) with copper terminals and shell (Verdigris will not form on a copper shell, but will on a brass shell).
8. Represents an iron box placed on wooden block No. 21, for the purpose of recessing the box in concealed work, shown in section in Fig. 10. A section of

17. Bronze cage or guard.
18. Double-pole "Hart" switch, 10 amperes, with special switch key and binding posts, terminals being on tops of posts, instead of on sides as usual, to facilitate making connections when in box.
19. Sixteen-candle-power 110-volt "Shelby" tipless lamp, with porcelain insulating button in base of lamp. This lamp is designed for paper mills and other damp

The incandescent lamp specifications are of particular interest, for they show a tendency to consider the light distributed beneath the lamp, and also that where lamps are subject to vibration in any manner the anchored filament lamp does not compare favorably with lamps without anchors.

The specifications for lamps read as follows:

## Arbor Support on Whiton Gear Machine.

The accompanying illustration shows a valuable combination of the Whiton Gear-Cutting Machine. When a number of duplicate gears are to be cut in a string on a long arbor, an arbor support or back rest is essential. The cut shows this arbor support mounted on the improved

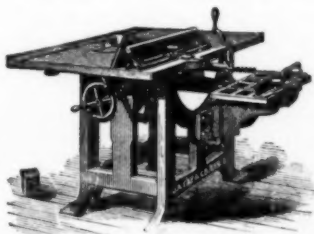
power-feed or semi-automatic machine. It may also be applied to the hand machine in the same manner, being equally convenient on either for the special work for which it is designed. A taper lock pin is provided, so that the upper arm may be swung away to remove the work and conveniently returned again to the exact center. By fitting an ordinary center in the lower work spindle special work, such as hobbing previously nicked worm gears, etc., may be done on an arbor between the two centers.

The D. E. Whiton Machine Co. of New London, Conn., will be pleased to give further particulars.

#### Combination Sawing Machine.

The apparatus illustrated herewith is a machine just introduced on the market by J. A. Fay & Co., 270 to 290 West Front street, Cincinnati, Ohio. It is their New No. 4 Combination Rip and Cross-Cut Sawing Machine, and has been designed for all general shop purposes. It will be found to have embodied in its construction many new devices and conveniences for facilitating the accomplishment of work.

It will rip, miter, cross-cut, groove and bore. The column is heavy, with broad base, insuring rigidity. The table is of ample size, and can be set to varying angles up to 45 degrees for the purpose of bevel and miter sawing. It is vertically adjustable to suit the thickness to be sawed by a hand-wheel connecting with a screw and bevel gears. A section



COMBINATION SAWING MACHINE.

about the saw is removable to allow of grooving, gaining, rabbetting and other heads. The ripping fence is gibbed on the front edge of the table, and is always retained square with the saw; it can be moved entirely across the table and used on the other side for bevel sawing. Straight grooves are cut in the table each side of the saw for cross-cut fences and miter gauges. The boring attachment is very substantial, and is fitted with a movable table.

As is well known, J. A. Fay & Co. manufacture a very extensive line of woodworking machinery, and they will be pleased to quote prices and furnish all particulars. They will also be pleased to forward their new handsome illustrated hanger, in two colors, showing about a hundred of the machines they make.

A Work of High Quality.—That typesetting and printing are rapidly emerging from a mechanical process to a fine art is demonstrated by an examination of the different publications that are offered for review. The most enterprising American manufacturers realize this thoroughly, and a striking example is a booklet on the subject of "Automatic Tenoners" issued by the H. B. Smith Machine Co. of Smithville, N. J. This booklet seems to fill its mission thoroughly, both from a mechanical and a literary point of view. It tells a story about so prosaic a thing as a woodworking machine in such an entertaining and pleasing manner as to be exceedingly interesting to even an entire novice on the subject. One cannot help but admire the illustrations, which are fine examples of half-tone work. The paper used is the very finest obtainable. The booklet is printed in two colors, orange and black, and the cover is a heavy seal-brown paper, with embossed design, no colors, giving a decidedly rich effect.

#### TRADE NOTES.

A Busy Concern.—The Peck-Hammond Co., Cincinnati, Ohio, was recently awarded the contract for the heating, ventilating and dry-closet system for the new high-school building at East Lake, Ala.

Business Opportunities.—In another column will be found a description of a laundry outfit offered for sale at a bargain. Messrs. R. S. Armstrong & Bro. of Atlanta, Ga., will give additional information.

Running Night and Day.—This expression tells the story of the business with the Triumph Electric Co. of Cincinnati, Ohio, better than volumes of description. It has been obliged to employ a night and day force for some time, and is using every facility to fill contracts for electric-light and power machinery.

A Large Capacity.—In a recent issue a description was given of the mercerizing machine placed on the market by the Philadelphia Textile Specialty Machine Co. of Philadelphia, Pa. As stated in the description, it can be used in connection with ordinary cotton yarns at a small cost. The company is prepared to furnish machines which will mercerize any capacity from 100 pounds upwards.

Compelled to Enlarge.—The W. J. Clark Co. of Salem, Ohio, is making quite extensive additions to its works. Though it already has one of the largest and most completely-equipped plants in this country for making elevator buckets, joist hangers, tote boxes, etc., of plate and sheet steel, the demand for its work is outgrowing its present capacity, making it necessary to still further enlarge and add machinery.

Interested in the South.—Mr. J. P. Hornaday, who makes a specialty of handling Southern timber and mineral lands and acts as agent for investors in the South, as well as corporations, has been engaged in attracting the attention of a number of Northern and Eastern companies to opportunities for business in this section. Mr. Hornaday may be addressed at Rooms 1007-1008 Union Trust Building, Cincinnati, Ohio.

Ball Engines.—Increase in business is one of the best indications of the superiority of work turned out at a factory. The Ball Engine Co. of Erie, Pa., is evidently very successful, as its recent orders include engines for very important work. One order is for 350 horse-power to operate the electric plant at the coal docks of the Reiss Company of Sheboygan, Wis. Engines are also being furnished for St. Mary's Hospital, Philadelphia.

An Extensive Plant.—The Stanley Electric Manufacturing Co. of Pittsfield, Mass., has been remembering its friends with an attractive illustration of its plant, which gives an excellent idea of the growth of the company's business. It now has thirty acres of ground, and the building alone represents 150,000 square feet of floor space. The Stanley Company is noted for the high standard of its specialties, and its remarkable progress is largely due to this fact.

Important Machinery Sale.—In another column will be found the advertisement of a trustee's sale of railroad supplies, machinery, etc., to take place on September 10 at Baltimore. The equipment includes a large number of boilers and engines suitable for various purposes, also one Buffalo forge, blocks, tackle, piping, steam gauges and tanks. In addition a quantity of office furniture will be placed on sale by the trustee, Harry N. Abernethy, Equitable Building, Baltimore.

Many Large Orders.—From all parts of the country come orders to the Fred. W. Wolf Co. of Chicago, Ill., for its ice and refrigeration machinery. The orders include a 50-ton plant for St. Paul, Minn.; a plant of 175 tons capacity for Denton, Texas; a 125-ton plant for Bakersfield, Cal. Illinois, Mississippi and Indiana are also represented in the list. Apparatus manufactured by this company is so uniformly satisfactory that each order filled by the company forms a strong advertisement for it.

Extensive Improvements.—About 10,000 square feet of additional floor surface will be provided when the improvements to be made by the Girard Boiler & Manufacturing Co. at Girard, Ohio, are completed. The additions will be provided with the most modern tools, such as punches, air compressors and cranes. Outside equipment for field work will consist of a 50-horse-power hoisting engine, as well as an air compressor.

The company has recently secured a contract for four stoves and one furnace for the La Belle furnaces at Steubenville, Ohio. The contract amounts to over \$30,000.

Reliable Lamp.—The Western Electrical Supply Co. of St. Louis has recently taken the exclusive territorial selling agency for the new type Peerless Incandescent Lamp. The factory has been experimenting on this lamp for the last two or three years, and it is claimed that it produces a lamp which is practically perfect, both mechanically and electrically. The company's success with this lamp has been extremely flattering, and it is perfectly willing to send out lamps for trial to anyone who is on the market for a fully high-grade lamp. It guarantees them strictly as to sustained candle-power, current consumption and life.

In Great Demand.—The present capacity of the Nazareth cement plant is 1500 barrels of Portland cement per twenty-four hours. Plans have been prepared, however, to increase the capacity to 3000 barrels daily, for the reason that the demand for it has increased so rapidly. This cement has become a prime favorite both for concrete work and in laying of sidewalks. Its uniform color, fine grinding and peculiar set have secured for it a demand almost unprecedented. It is largely used in the laying of Portland cement sidewalks. The general agent, the Charles Warner Co. of Wilmington, Del., New York and Philadelphia, is to be congratulated upon the success that has attended its introduction of this cement, which by its judicious advertising and persistent work, together with its uniform quality, have created for it so unusual a demand as to have the product of the mill constantly and largely oversold.

Almost to Full Capacity.—The J. R. Alsing Co. of 75 Guernsey street, Brooklyn, N. Y., manufacturer of pulverizing, grinding, drying, cutting machinery, etc., has been taxed almost to the full capacity of the works with orders for machines in its line. Of late it has designed improved machinery for the reduction of different kinds of material for various industries, which found a ready market, and has a very promising business with the coconut oil manufacturers in the West Indies and South America, with its new process of producing coconut oil, also with other machinery for the reduction of certain drugs and chemicals. On account of its experience in the building of this kind of machinery, it is generally sought by people who are starting in business, or by older firms who are introducing new materials. Firms meeting with any difficulty in the reduction of their material, or who cannot obtain the results sought for, would do well to communicate with the company.

New Water-Wheel Company.—It will be of interest to owners and users of water-power to learn that the well-known firm of T. C. Alcott & Son of Mt. Holly, N. J., manufacturers of the High Duty Turbine, have acquired by purchase the entire plant, including all patterns, patents, etc., of the John W. Taylor Manufacturing Co., formerly and better known as T. H. Risdon & Co., manufacturers of the celebrated Risdon Turbine and the Taylor Sleeve Gate Turbine. The combined plants of these companies will be hereafter operated to their fullest capacity by the incorporators, Thomas J. Alcott and his two sons, Edgar A. and Howard E. Alcott, under the name of the Risdon-Alcott Turbine Co. Its product will be turbines and appurtenances almost exclusively, comprising the large assortment of patterns of the celebrated Risdon Turbine in cylinder and outside register gate styles; also the High Duty Turbine of inside register gate pattern, and the Taylor Sleeve Gate Turbine, which is a wheel of very large capacity. The wide range of power and speed covered by the different sizes and patterns controlled by this company makes it possible to fulfill the requirements of most any situation, no matter how exacting. The greatly-increased facilities in the way of new buildings and new tools and appliances enables it to handle work of large magnitude with dispatch.

Buffalo Forge Co.—The exhausters, separators and other specialties made by the Buffalo Forge Co. of Buffalo, N. Y., are so well and favorably known to the trade that it seems useless to publish any description relative to them. But the company has recently issued a pamphlet giving a description of the sizes and prices of its planing-mill exhausters for different purposes, also the improved shavings and dust separators. Incidentally it may be said that the company is prepared to furnish information of any kind as to the Pan-American Exposition, and has a booth in Machinery Hall, to which it invites its friends. Some of its apparatus is working in several parts of the exposition.

#### TRADE LITERATURE.

Sovereign Brand Cement.—Charles Warner Company, Philadelphia, New York and Wilmington, has recently issued a pamphlet on the "Sovereign" brand of Portland cement, of which it is the sales agent, which it will send to any address on application.

Perfection in Telephones.—This is a very ambitious title for a catalogue, but, judging from the illustrations and the description contained in that recently issued by the Telephone Manufacturing Co. of Sumter, S. C., this company's work seems to have nearly if not quite reached perfection. The catalogue contains excellent illustrations of various telephones which it manufactures, which are clearly described. It should be of much interest to all telephone users.

A Liberal Offer.—A recent card issued by the S. Obermayer Co. of Cincinnati and Chicago announces that the company is prepared to offer first-class materials, prompt service, liberal terms and lowest possible prices. It makes a specialty of supplying everything needed in the foundry.

Very Pertinent.—A pamphlet recently issued by the H. W. Johns Manufacturing Co. of 100 William street, New York, contains but four leaves, including the cover, but even in this space an idea is given of the variety of uses of asbestos packings. They are utilized on all kinds of vessels, from a warship to a steam launch, and in boiler work generally.

Graphite for Automobiles.—Since the era of bicycles and automobiles the name of the Joseph Dixon Crucible Co. of Jersey City has been familiar to users of these vehicles on account of the lubricating compounds which it manufactures. For years Dixon's graphite has been very popular with cyclists generally. It has also become the favorite for use upon automobiles of various kinds. A recent leaflet published by the Dixon Company contains a number of testimonials to this effect from expert chauffeurs.

Jeffrey Machinery.—Every mine operator in this country and many of those outside are aware that Jeffrey mining machinery represents the highest standard. The locomotives, pumps, electric generators, cars, cutting and drilling machinery manufactured by this company are so favorably known that it would seem useless to describe them. A recent catalogue issued by this company, however, is worthy of mention, owing to the excellence of the illustrations and the clear and concise manner in which it is worded. On its pages will be found much valuable information concerning mine motors especially. The cover is artistic in the extreme.

Actually in Operation.—The camera has been brought to the aid of the Chicago Pneumatic Tool Co. to illustrate what it calls a special circular. The circular, however, is extremely elaborate, and the photographs of the highest order. They have a special interest from the fact that they illustrate the Chicago tools actually in operation in shipyard and other work under very difficult conditions. An extensive outfit of tools manufactured by this company is utilized in warship and other construction at such plants as that of the Newport News Shipbuilding & Dry-Dock Co. The general offices of the tool company are in the Monadnock Block, Chicago.

Wire Rope in the Oil Fields.—Interest in the use of wire rope in drilling oil wells is becoming extensive not only in this country, but in Australia as well. Some interesting facts are contained in a catalogue recently issued by the American Steel & Wire Co., dealing with the introduction of wire rope for the purpose mentioned. For some time wire rope has been used for sand lines, pumping lines and tubing lines, and quite extensive experience had been obtained with drilling lines in the deep artesian well fields of Australia and in drilling wells in South Dakota. The American Steel & Wire Co. some time since sent a representative into the Kern county oil fields of California, and after a thorough discussion with oil producers and contractors decided that the substitution of wire for the manila drilling lines was not alone possible, but would be thoroughly practicable. An important feature is the use of the Swan automatic drilling swivel. A number of California oil producers have now used the wire drilling lines and endorse them. The catalogue goes into details as to the advantages and methods of application, gives an illustrated description of how to connect a wire drilling line, to arrange for spudding, and of the method of splicing.



# CONSTRUCTION DEPARTMENT.

**THE MANUFACTURERS' RECORD** seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with every one interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

\*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in a town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and it is often advisable to add the names of one or more incorporators as an aid to the postmaster in delivering mail.

## ALABAMA.

**Birmingham—Box Factory.**—Lockwood Manufacturing Co., J. L. Lockwood, president, has taken permit to erect \$3000 building to contain its proposed equipment for manufacturing wooden boxes and crates.

**Birmingham—Iron-bed Factory.**—Globe Iron Bedstead Manufacturing Co., lately mentioned as incorporated, has plant completed, with capitalization of \$10,000 and probability of increase to \$25,000; building is 150 feet square; output 150 beds per day.\*

**Birmingham—Gas-plant Improvements.**—Birmingham Railway, Light & Power Co. is about completing plans for the proposed improvements to its plant and extensions of mains; capacity of plant will be increased 25 per cent.

**Birmingham—Brick Works.**—Alabama Brick Co. has been incorporated, with capital stock of \$25,000, by A. E. Reynolds, T. H. McMichael, Jr., and J. M. Gregg, to manufacture bricks.

**Birmingham—Ore Company.**—Chartered: Castleman Ore Mining Co., capital \$2500, by J. W. Castleman, Augustus Benner and Ellie H. Castleman.

**Carrollton—Cotton Mill.**—A movement is on foot for the erection of a cotton factory. Possibly John T. Cochrane can give information.

**Eufaula—Brick Works.**—A. J. Baldwin & Co. of Dawson, Ga., lately reported as establishing brick works at Eufaula, have incorporated Eufaula Brick Manufacturing Co., capital stock \$10,000, to operate the plant; daily output will be 60,000 to 80,000 brick; machinery all purchased.

**Eufaula—Grist Mill and Gin.**—John Sherry will build cotton gin and grist mill; has completed dam to develop the power.

**Fort Morgan—Ice Plant.**—A one-quarter-ton ice plant is reported as to be built. Major J. T. French, 416 Pullman Building, Chicago, Ill., can probably give information.

**Hartselle—Oil Wells.**—Moulton Valley Oil Co. has organized, with S. B. Trapp of Montgomery, president; D. W. Day of Hartselle, first vice-president; J. P. Kohn, secretary, and J. C. Haas of Montgomery, treasurer; company acquires two plugged oil wells on lands in Morgan county, and will drill other wells.

**Huntsville—Electric Light Plant.**—Huntsville Railway, Light & Power Co. will install

electric-lighting plant; machinery has been purchased.

**Huntsville—Sewing-machine Factory, etc.**—J. M. Brosius states that he is organizing a company to manufacture motor sewing machine and separate motors for any sewing machine.

**Jackson—Oil Well, etc.**—T. G. Bush of Birmingham and associates, lately reported as having leased and to develop salt-bearing lands, will also drill for oil; machinery for latter purpose has been contracted for.

**Larkinsville—Saw-mill.**—W. W. McCutchen will erect saw-mill.

**Sheffield—Brewery, etc.**—The Cincinnati (Ohio) parties who were reported lately as having bought the Sheffield Brewery, etc., will organize a \$100,000 stock company; company will operate the brewery, with annual output of 50,000 barrels of beer, and will add a 75-ton ice plant. This brewery cost \$50,000 to build, but was never operated.

**Tuscaloosa—Iron Furnace.**—It is rumored that Frank Holt is to arrange for constructing an iron furnace for Central Iron & Coal Co.

## ARKANSAS.

**Arkansas—Coal Mines.**—Tri-State Oil & Coal Mining Co. will open coal mines in the Pettit James valley. See item under Jackson, Tenn.

**Dodd City—Lead and Zinc Mines.**—Pilot Rock Zinc & Lead Co., reported incorporated lately, has organized, with W. Henry Sisson, president; Robert Sandstrom, vice-president, and capital stock of \$300,000. Development of lead and zinc property has commenced. Chicago (Ill.) office at 119 La Salle street.\*

**Fort Smith—Ice Plant.**—Fort Smith Ice & Cold Storage Co. will enlarge plant by addition of 20-ton machines.

**Hope—Zinc Mines.**—Newton Zinc & Timber Co. has organized, with W. Y. Foster, president; W. W. Foster, vice-president; Alex. C. Hull (of Little Rock), secretary, and W. P. Agee, treasurer, to develop zinc lands; capital stock \$100,000.

**Little Rock—Electric Power-house.**—Edison Electric Light Co. is reported as to build four-story power-house.

**Malvern—Mineral Developments.**—Malvern Mineral & Mining Co. has organized, with capital stock of \$50,000, to develop minerals in 3500 acres of land that have been optioned; Wm. Kilpatrick, president; L. B. Dewey, vice-president; N. P. Richmond, secretary, and T. R. McHenry, treasurer.

**Malvern—Ice Plant.**—Malvern Light & Power Co. is reported as to build ice plant.

**Monticello—Cotton Mill.**—Anderson Cotton Mills, recently reported, has organized, with T. H. Matthews, president; J. G. Williamson, secretary, and W. N. Brown, superintendent. Arrangements are being made for mill and equipment.\*

**Newport—Ice Plant.**—T. J. Watson is reported as interested in proposed erection of ice plant.

**Rives—Oil Mill.**—Valley Planting Co. will build a cottonseed-oil mill.

**Siloam Springs—Cold-storage Plant.**—J. J. Bartell will install cold-storage plant for fruits.

**Stamps—Logging Companies.**—Gallaher, Hart, Grace, Gravel and Lee Logging Companies have been incorporated, each with capital of \$5000.

**Texarkana—Telephone System.**—S. F. Richardson has franchise for installation of telephone system.

## FLORIDA.

**Bartow—Oil and Mineral Developments.**—South Florida Oil & Mineral Development Co. has been incorporated, with capital stock of \$150,000, to develop oil and general mineral lands; Albert F. Dewey, president; Chas. G. Davis, vice-president, and Wm. B. Swearingen, secretary-treasurer.

**Jacksonville—Real Estate.**—Chartered: Dyal-Upchurch Investment Co., capital stock \$100,000, by John N. C. Stockton, Miles Albertson and John J. Upchurch.

**Jacksonville—Paint Factory.**—Florida Paint Co. will erect a factory; building to be four stories high.

**Jasper—Printing Company.**—Jasper Printing Co. has been incorporated, with capital of \$5000, and John M. Caldwell, president; H. J. McCall, secretary, and R. L. Lewis, treasurer.

**Lakeland—Water-works.**—Citizens are petitioning for a vote on issuing \$15,000 for con-

struction of water-works. Probably "Town Clerk" can inform.

**Madison—Mercantile.**—Incorporated: Howley-Smith Company, capital stock \$10,000, by John H. Smith, A. A. Hinley, C. B. Ashley and others.

**Pensacola—Publishing.**—Chartered: The Journal Company, capital stock \$10,000, to publish the Journal and for other publishing purposes, with Frank L. Mayes, manager.

**Punta Gorda—Wharf.**—De Soto Wharf & Cattle Co. has let contract to C. L. Fries for erection of wharf 1800 feet long, 30x75-foot bulkhead, and for cattle pens.

**Waldo—Broom Factory.**—Lawrence Trowbridge will establish broom factory; machinery ordered.

## GEORGIA.

**Abbeville—Oil Wells.**—A \$50,000 stock company has organized to drill for oil; A. T. Baker, president; J. L. Pittman, secretary, and E. H. Williams, attorney.

**Atlanta—Cannery.**—N. W. Armstrong of New York proposes the introduction of canneries and the establishment of works for producing cans and other supplies.

**Atlanta—Oil Company.**—Atlanta Oil Co. has been incorporated, with capital stock of \$10,000, to deal in and manufacture oils, etc., by D. L. Peters and Geo. B. McLaughlin.

**Augusta—Builders' Supplies.**—Builders' Supply Co. has been incorporated, with capital stock of \$5000, by W. M. Nixon, T. C. Bilgh, C. E. Clarke and H. P. Shewmake, to deal in builders' supplies.

**Clarksville—Drugs, etc.**—Incorporated: Clarksville Drug & Paint Co., with capital of \$3000, by Sylvester M. Chestnutt and Columbus L. Chestnutt, to deal in drugs, paints, etc.

**Cordele—Ice Plant.**—Cordele Ice Factory contemplates enlarging.

**Cuthbert—Cotton Mill.**—It is reported that Ohio parties will buy, enlarge and put in operation an idle mill.

**Darien—Pilot Boat Company.**—Darien & Sapelo Pilot Boat Co. has been incorporated, with capital stock of \$6200, by W. H. Patterson, James R. Jussely and others.

**Decatur—Electric Light Plant.**—G. W. Martin has applied for franchise for electric-lighting company that proposes erecting plant.

**Fitzgerald—Ice Plant.**—Fitzgerald Ice Co. may increase capacity from five to fifteen tons by enlarging plant.

**Gainesville—Fertilizer Factory.**—Virginia-Carolina Chemical Co. (office at Richmond, Va.) is reported as to build an extensive fertilizer factory.

**Griffin—Ice Plant.**—Griffin Ice Works will enlarge from five to twenty-five tons capacity daily; machinery probably contracted for.

**Juliette—Corn Mill.**—Juliette Mining Co., lately reported incorporated, should have been named as the Juliette Milling Co.; company will enlarge corn-milling plant by adding ten stones (making sixteen in all), daily output to be 3000 bushels.

**Rome—Candy Factory.**—Rome Candy Factory has been organized and will establish plant for candy and bread-making and for rebelling molasses, etc. Address care Box 336.\*

**Roswell—Stone Dam.**—Roswell Manufacturing Co. will construct stone dam after specifications by Collier & Brown, 1112 English-American Building, Atlanta. This firm will open bids on construction September 16.\*

**Savannah—Cotton Mills.**—Board of Trade is considering plans for inducing Northern cotton manufacturers to build mills at Savannah.

**Thomaston—Electric Light Plant.**—City will erect an electric-lighting plant after plans and specifications by Collier & Brown, 1112 English-American Building, Atlanta.

## KENTUCKY.

**Artemus—Coal Mines.**—N. A. Ross of Grays, Ky., has purchased and will develop Artemus Coal Co.'s property and other coal lands near Artemus.\*

**Franklin—Ice Plant.**—It is reported that T. W. Springer, lately mentioned as interested in ice plant, will erect ice plant of fifteen tons capacity.

**Georgetown—Oil Wells.**—Scott County Oil & Development Co. will be incorporated, with capital stock of \$300,000, and A. C. Cook, president, to drill for oil on 5000 acres of leased land.\*

**Georgetown—Sewerage System.**—The committee to investigate as to construction of sewerage system has reported that an expenditure of about \$25,000 would be required, and this cost would necessitate submitting proposition to the voters. An engineer will be engaged to make survey for system. Address "The Mayor."

**Henderson—Ice Plant.**—Frank F. Eckert has contracted for installation of 20-ton ice plant and 600-ton cold-storage plant.

**Louisville—Refrigerating Plant.**—J. F. Oertel has contracted for installation of 40-ton refrigerating machine at his brewery.

**Louisville—Tobacco Factory.**—Harry Weisinger Tobacco Co. will arrange to expend additional capital for enlargements to factory.

**Louisville—Foundry.**—J. J. Gaffney has made plans for factory and foundry buildings 181 feet 6 inches by 321 feet 6 inches and 121x253 feet, for Peerless Manufacturing Co.

**Louisville—Wagon Factory.**—Kentucky Wagon Manufacturing Co. has had plans prepared by D. X. Murphy & Bro. for hub-and-shop.

**Oil Springs—Oil Wells.**—B. A. Ogden, L. H. Bush, J. M. Benton and W. T. Ogden have incorporated Clark County Oil & Development Co., with capital stock of \$20,000, to develop for oil.

**Owensboro—Barrel Factory.**—R. Dinwiddie & Co. of Millwood will build stove mill and barrel factory; site bought for \$100.

**Owensboro—Buggy Factory.**—J. N. Grady, W. S. Hazel and Z. T. Robinson have organized Kentucky Buggy Co., with capital stock of \$40,000, purchased site and will build buggy factory; building will be four stories, 160 and 128 feet, 55 feet wide.

**Paris—Ice Plant.**—Paris Ice Manufacturing Co. has let contract for addition of a 12½-ton ice machine.

**Richmond—Barrel Factory.**—Richmond Barrel Factory has bought land on which to build addition to its plant.

**Silver Creek—Distillery.**—Warwick Distillery is doubling its capacity, increasing to seventy barrels daily and overhauling plant.

**Somerset—Ice Plant.**—Runners state that Beecher Smith will erect an ice plant.

**Somerset—Oil Wells.**—Pulaski County Oil Co. has organized, with capital stock of \$80,000, to drill for oil; O. H. Waddy of Somerset, president; M. T. Chestnut of Webster Grove, Mo., general manager, and J. R. Sayres of St. Louis, Mo., secretary.

## LOUISIANA.

**Alexandria—Ice Plant.**—J. E. Blackburn of Boyce has organized a \$30,000 company to erect an ice plant.

**Alexandria—Ice Plant.**—Alexandria Ice & Cold Storage Co. will increase capital to \$60,000 and add more machinery to ice plant.

**Bastrop—Ice Plant.**—It is reported that J. B. Lawhead will build a 10-ton ice plant.

**New Orleans—Cigar Factories.**—S. Strauss and F. Brenar will establish cigar factory at 1014 Tchoupitoulas street, daily output to be from 5000 to 10,000. Vengamin Sosio of Pensacola, Fla., will establish cigar factory in New Orleans.

**New Orleans—Drainage System.**—National Contracting Co., Frank P. Mullen, manager, has signed contract for work covering about \$400,000 on the proposed municipal drainage system.

**New Orleans—Oil Tanks and Pipe Lines.**—Lone Star & Crescent Oil Co. is completing the construction of its 27,500-barrel oil tanks near New Orleans, and soon will be ready to deliver in the city oil from the Beaumont (Texas) fields. Pipe lines are also under construction, and the city has been asked for privileges that will facilitate operations in New Orleans. E. G. Schlieder is president.

**New Orleans—Oil Tanks and Pipe Lines.**—J. M. Guffey Co. has nearly completed its 50,000-barrel oil tanks, and has applied to city council for pipe-line privileges that will enable it to deliver in the near future from the Beaumont (Texas) oil fields oil for illuminating purposes and crude petroleum for fuel. The illuminating oil will come from the refinery, now nearing completion at Port Arthur, Texas. H. P. Brawley and R. S. Riekey are local selling agents; Edgar M. Moore is general sales agent, with office at Port Arthur, Texas; company's general offices at Pittsburg, Pa.

**New Orleans—Water Supply.**—It is reported that plans are being considered for

the construction of pipe line to convey drinking water to New Orleans from St. Tammany parish. Posey, Weingar & Co. of St. Louis, Mo.; Kaye, Duwofe & Co. of New York and others are said to be interested (in connection with an electric railway project). Lloyd Posey, representing those interested, is at the Cosmopolitan Hotel.

New Orleans—Molasses Plant.—New Orleans Molasses & Trading Co., Ltd., has been incorporated, with capital stock of \$100,000, to rebel and can molasses, etc., with Thos. J. Feibleman, president; Joseph Cohn, Jr., vice-president, and Jacob S. Feibleman, treasurer.

New Orleans—Portland Cement Company. American Portland Cement Co., Ltd., capital \$10,000, has been incorporated by W. J. Kelly, L. A. Jung and F. A. Jung, to act as agent for Alabama Portland Cement Co.'s products and for other building supplies, etc.

New Orleans—Ship Chandlery.—Incorporated: M. D. Lagan, Limited, capital stock \$50,000, to conduct ship chandlery, etc., with Chas. H. Lagan, president, and Foster De Buys, secretary.

Shreveport—Ice and Cold-storage Plant.—Henry Rose Mercantile & Manufacturing Co. will erect 15-ton ice plant, with cold-storage addition.

Westwego—Ice Plant.—J. W. Gaidry is reported as to build a 20-ton ice plant.

#### MARYLAND.

Baltimore—Electrical-specialties Factory. Marine Electric Specialty Co., capital \$3000, has been incorporated to manufacture electrical mechanical devices, by George Keck, Thos. W. Carey, Geo. W. Price and others.

Baltimore—Gas-plant Improvements.—Consolidated Gas Co. will cease manufacturing gas from oil and water and return to the use of coal. About \$30,000 will be expended for installing Bray burners in residences; also the old Spring Garden Gas Works, owned by the company, will be put in operation.

Baltimore—Shovel Works.—Maryland Shovel & Manufacturing Co. has been incorporated, with capital stock of \$25,000, to manufacture shovels and other sheet-metal goods, by Wm. H. Whiting, James Walker, Jos. W. Abbott, Chas. H. Anderson and W. T. Kuhns.

Baltimore—Telephone Manufacturing.—Chartered: Hughes Telephone Manufacturing Co., capital stock \$100,000, for manufacturing telephones, by Chas. C. Hughes, Edw. L. Ward, Wm. Hutcheson and others.

Baltimore—Pier.—Armstrong & Prentzenoff of Philadelphia, Pa., have contract to erect Northern Central Railway's proposed 330-foot pier, 120 feet wide, of steel frame, sheet-iron sides and truss roof, etc. Contract for lumber has been placed; flooring and sides will contain 1,500,000 feet of lumber; 4000 piles will be used.

Baltimore—Distillery.—Francis E. Frey, Oscar C. Martinet, S. G. Blanche and others have incorporated St. Francis Distilling Co. to manufacture Georgia watermelon whiskey, wine, gin and brandy; capital stock \$100,000.

Georgetown—Electric-light and Water Works.—A movement is on foot for the construction of electric-light plant and water works. Probably "Town Clerk" can inform.

Frostburg—Reservoir.—Town has not definitely decided on the construction of proposed new reservoir for water system, but will do so on September 3; J. S. Metzger, town clerk.

Hancock—Sand Mill.—W. F. Shelly of Berkeley Springs, W. Va., will build a 1000-ton sand mill near Hancock; also contemplates erecting a glass factory.

Mountain Lake Park—Electric-light and Water Works.—Chartered: Garrett Water & Light Co., capital stock \$100,000, to operate plants at Mountain Lake Park and Loch Lynn Heights, by P. T. Garthright of Mountain Lake Park, F. T. Martin of Fairmont, W. Va.; F. A. Thayer of Oakland, Md., and others.

Washington, D. C.—Automobile Factory.—Washington Auto-Vehicle Co. has been incorporated, with capital stock of \$1,000,000, to manufacture automobile delivery wagons, bicycles, etc.; J. Sprigg Poole, president; J. B. Chamberlain, vice-president, and T. Janney Brown, secretary.

Washington, D. C.—Refrigerating Plant, etc.—National Bureau of Standards will erect \$200,000 laboratory and \$50,000 machine shop; also possibly a refrigerating plant to be used in securing equable temperature in tests for standardizing instruments.

#### MISSISSIPPI.

Ackerman—Compress and Oil Mill.—Ackerman Compress & Warehouse Co., reported incorporated lately, has commenced erection

of buildings to accommodate compressing equipment; next season will erect a cottonseed-oil mill. J. M. Phillips is president.

Fayette—Water-works.—C. J. Jenks has been chosen engineer for the construction of the water-works for which city voted \$10,000, as reported recently.

Iuka—Iron Furnace.—It is reported that Geo. W. Dixon will build a 28-ton iron furnace.

McHenry—Educational.—McHenry High School, capital \$2000, has been chartered by Dr. W. H. Whittle and others.

Meridian—Lumber Company.—C. W. Robinson Lumber Co. has been incorporated, with capital stock of \$40,000, by C. W. Robinson, J. H. Broach, John Kamper, W. H. Pickard and A. M. Cate.

#### MISSOURI.

Kansas City—Asphalt Plant.—Parker-Washington Paving Co. will rebuild at once its recently-burned asphalt plant.

Kansas City—Implement Works.—W. J. Smith & Sons will erect \$50,000 factory and warehouse 120x258 feet. This will be an addition to plant for making wheel-scrappers, wheelbarrows, railroad plows, etc. Root & Siemens are preparing the plans.

St. Joseph—Machine Shops.—St. Joseph Stockyards Co. states it has not bought land for additional buildings, as reported recently, but is figuring on the erection and equipment of a repair shop for its locomotives.

#### NORTH CAROLINA.

Charlotte—Plumbing.—A. R. Wilman Plumbing Co. has been incorporated, with capital stock of \$3000.

Charlotte—Plumbing, etc.—S. E. Abbey, T. A. Conklin, Jr., and W. H. Bigelow have incorporated Carolina Plumbing & Heating Co., capital stock \$25,000, for general plumbing, steam heating, electrical installation, etc.

Charlotte—Belting Factory.—Charlotte Belting Co. has taken over the belting department of Charlotte Supply Co., and is erecting three-story 40x75-foot addition, in which to install machinery for manufacture and repair of belting.

Charlotte—Printing Plant.—Osmond L. Barringer will erect building, two stories, 40x70 feet, to contain printing plant. About \$5000 will be the cost. Address at 26 West Trade street.

Durham—Heating Plant.—Trinity College is about to install a heating plant to cost between \$20,000 and \$30,000. Bids are now being considered.

Elizabeth City—Ice Plant.—Crystal Ice & Coal Co. will rebuild its 20-ton ice plant recently destroyed by fire.

Ellenboro—Monazite Mines.—Karl Kethel of Germany, representing New York parties, has bought 353 acres of land near Ellenboro for \$5000, on which monazite mines will be developed.

Fayetteville—Silk Mill.—It is rumored that Ashley-Bailey Company (main office at Paterson, N. J.) will build another silk mill.

Fayetteville—Mercantile.—B. R. Huske, Roy H. McDuffie and Leighton Huske have incorporated Huske Hardware Co., with capital stock of \$10,000.

Franklin—Electric-light and Water Works. An election has been called to vote on issuing \$30,000 of bonds for the construction of water-works and an electric-light plant. W. H. Macon is mayor.

Greensboro—Furniture Company.—Bell Furniture Co. has been incorporated, with \$15,000 capital, by J. R. Bell, M. Vuncannon and E. P. Motley, to manufacture and deal in furniture.

Henderson—Tobacco Company.—D. Y. Cooper and others have incorporated Cooper Tobacco Warehouse Co., with \$15,000 capital stock.

Henderson—Electric-light Plant.—It is rumored that an electric-light plant will be built, and that N. W. Girdwood of Columbus, Ga., is interested.

Hickory—Chair Factory.—Cates Chair Factory, reported incorporated lately, built its plant last spring, and is now in full operation.

Hickory—Cotton Mill.—Capt. J. M. Odell of Concord has, as rumor lately said, some intention of building a cotton mill on the Catawba river near Hickory; however, it has not been definitely decided to build.

Wilmington—Saw-mill.—Chas. H. Cooper has leased, put new machinery in and commenced operating the Northrop saw-mill; annual output to be 10,000,000 feet.

#### SOUTH CAROLINA.

Charleston—Phosphate Mine.—Southern States Phosphate & Fertilizer Co., recently

incorporated at Augusta, Ga., will develop a phosphate mine near Charleston, besides manufacturing fertilizers at Augusta.

Columbia—Furniture Company.—Chartered: A. S. Thomas Furniture Co., capital stock \$15,000, by A. S. Thomas and John B. White.

Columbia—Sewerage System.—City council has named a committee to take charge of constructing the proposed municipal sewerage system. About \$25,000 will be expended annually. Address "Sewerage Commission of Columbia."

Mt. Carmel—Flour Mill.—Parks & McDonald, lately reported to build a 50-barrel flour mill, have bought Old Calhoun Mills, and will expend about \$3000 equipping same as a 75-barrel plant; will do the work in January.

Mullins—Lumber and Brick Company.—Chartered: Mullins Lumber & Brick Co., capital stock \$15,000, by S. H. Schoolfield, John B. Boatwright and E. O. Bransford.

St. Matthews—Water-works.—The construction of water-works is talked of. Possibly "Town Clerk" can inform.

Union—Lumber Company.—Chartered: Bailey Lumber & Manufacturing Co., capital stock \$10,000, by R. L. McNally and T. E. Bailey.

Winnboro—Publishing.—Chartered: Winnboro News and Herald, capital stock \$6000, by J. F. Fooshe, W. D. Douglass and J. Q. Davis.

#### TENNESSEE.

Benton—Brick Works.—W. H. Williamson is reported as to manufacture bricks.

Charleston—Lead and Zinc Mines.—Geo. S. Ober of Knoxville, lately reported as having completed sale of lead and zinc lands at Charleston, states that Chatata Lead & Zinc Co. is developing the property; capital stock is \$30,000 and Edgar Jones is president; C. F. Sharpe is secretary.

Chattanooga—Iron-enamelling Plant.—Cahill Iron Works has completed additional buildings that have been erecting, and will install therein machinery for manufacturing enamelled bathtubs and kitchen furniture.

Chattanooga—Stove Foundry.—Chattanooga Stove Co. is having estimates prepared on the cost of a large addition to its foundry.

Chattanooga—Steamboat Company.—Chartered: Chattanooga & Tennessee River Packet Co., with capital stock of \$10,000, by J. N. Trigg, L. Cramer, T. O. Trotter and others.

Columbia—Oil Wells.—Duck River Oil & Gas Co. has been organized, with capital stock of \$30,000, by A. B. Raines, John D. Dobbins, F. J. Ewing, W. J. Howard and R. C. Ewing, to drill for oil on a 4000-acre tract.

Elizabethton—Ice Plant.—D. J. Smith and S. E. Reynolds are reported as to build ice plant.

Fayetteville—Cotton Mill.—Elk Cotton Mills is reported as to double its capacity; now has 5000 spindles.

Glenraven—Flour Mill.—Felix Ewing will install additional new machinery in his flour mill.

Humboldt—Ice and Cold-storage Plant.—Beare Bros. will enlarge their ice plant and add a 50-ton refrigerating machine.

Jackson—Coal Mines and Oil Wells.—Tri-State Oil & Coal Mining Co. has been organized to develop oil lands in Tennessee, Kentucky and Louisiana, and coal lands in Arkansas, the tracts comprising about 5000 acres. J. D. Newton is president; A. Bensing, vice-president, and John W. Buford, secretary; office at 11 Brooks Building.

Jefferson City—Corn Mill.—Smith & Huggins are installing corn mill.

Johnson City—Ice Plant.—The Foundry & Machine Co. will erect an ice plant.

Knoxville—Foundry.—Fair Foundry Co. is making additions to its machinery.

Loudon—Paper Mill.—It is stated that A. C. Vankirk of Mt. Carmel, Ill., has about decided to establish at Loudon a \$250,000 paper mill, locating on ten acres of land.

McMinnville—Mineral Developments, Wood-working Plants, etc.—The Tennessee Company, reported organized recently, has incorporated and chosen Chas. B. Colt, president; E. M. Barnes, managing director, and J. Milton Earle, vice-president, all of Cleveland, Ohio, with offices in New England Building. Company has 60,000 acres of mineral and timber lands for development; will erect door and sash factory, dry-kilns, veneer plant, etc. Capital stock is \$5,000,000.

Memphis—Shoe Dealers.—R. I. Knox, T. W. Sherron, J. M. Hill and others have incorporated Sherron Shoe Co., with capital stock of \$12,000.

Nashville—Oil Wells.—The oil company mentioned last week has organized as the Mayfield Oil Co., with capital stock of \$5,000,

and proposes to drill for oil on 23,000 acres of land in Putnam, Overton, Fentress counties, Tennessee, and Wayne and Pulaski counties in Kentucky. J. C. Mayfield of Birmingham, Ala., is president; Chas. Sykes, first vice-president; J. H. Zarecor, secretary-treasurer, and F. H. Burt, general manager.

Nashville—Coffee Roasters.—Incorporated: Nashville Coffee & Manufacturing Co., capital stock \$100,000, by J. O. Cheek, W. K. Phillips, A. A. Matthews, C. T. Cheek and J. W. Neal.

West Nashville.—Edgar W. Hayes proposes erecting a mill for the manufacture of a new cereal coffee from a Tennessee product. A firm or company may possibly be formed.

Winchester—Oil Wells.—C. C. Anderson and associates will bore for oil.

#### TEXAS.

Beaumont—Oil Wells.—Montgomery & Neches River Oil Co. has been incorporated, with capital stock of \$300,000, to develop oil lands; Phares Coleman, president; Jas. P. Ferrall, first vice-president; Lee H. Well, secretary-treasurer, all of Montgomery, Ala.

Bogota—Ice Plant.—Sloan & Lowry contemplate erecting four-ton ice plant.

Cooper—Brick Works and Ice Plant.—A \$25,000 company has been organized to establish brick works and erect ice plant; machinery has been bought. Charles Tuttle can give information.

Dallas—Surgical-instrument Factory.—Chartered: Granger Manufacturing Co., capital stock \$10,000, to manufacture surgical instruments, by F. D. Granger, J. T. Elliott and A. F. Kirkpatrick.

Dallas—Miniature Electrical Railway.—Incorporated: Texas State Fair Miniature Electric Railway Co., capital \$3000, by A. P. Lipscomb, Henry Garrett and Wallace Stroud.

Denton—Ice Plant.—Alliance Milling Co. will enlarge plant by addition of 125-ton refrigerating machine and 50-ton ice machine.

El Paso—Cold-storage Plant.—Armour & Co. of Chicago have purchased site on which to build branch cold-storage plant and smokehouses; structure will be of stone and brick, four stories high. S. S. Jerom, general agent of firm, has local charge at present.

El Paso—Oil Well.—Alfred Courchesne and associates will drill for oil.

Galveston—Grain Elevator, etc.—Southern Pacific Railway is now having plans prepared in the office of Chief Engineer G. W. Roschke for the proposed 1,000,000-bushel grain elevator, previously announced as to be built. Company is also preparing to build plant to furnish electric lights and power for freight conveyors, elevators, docks, terminals, etc.

Grand Saline—Mercantile.—Chartered: D. D. Thomas Co., capital stock \$15,000, by D. D. Thomas, G. T. Nolan and J. T. Todd.

Greenville—Railroad Machine Shop, etc.—Sherman, Shreveport & Southern Railroad will build roundhouse 72x150x250 feet, machine shop 47x65 feet, car repair shop 18x45 feet, storeroom 18x45 feet, oil and sand houses 16x24 and 14x47 feet. Wm. O'Herin, superintendent power department, Parsons, Kan., prepared plans.

Handley—Electric Plant, Repair Shops, etc.—Northern Texas Traction Co. has let contract for erection of power-house and for a sub-power-house, repair shops, car sheds, etc., to cost \$50,000. The machinery for the power-houses will cost about \$250,000; E. Bishop, president, at Fort Worth.

Hempstead—Electric-light Plant, etc.—W. H. Freeman and associates will install electric-light plant and steam laundry; building, boiler and engine have been secured.

Ladonia—Ice Plant.—The Electric Light & Water Works Co. contemplates building a 20-ton ice plant.

Llano—Gold Mines.—C. C. Wilson of Fort Worth, lately noted as having bought and to develop the Borden gold mine, is now actively mining, and the proposed stamp mill will be of 100 tons capacity. Mr. Wilson is also developing Sharp Mountain, and will erect a 50 or 100-ton mill there.

Milford—Mercantile.—Chartered: R. W. Miller & Co., capital stock \$5000, by R. W. Miller, W. W. Boyd and J. R. Griffin.

Orange—Telephone Company.—Orange Telephone Co. has been chartered, with capital stock of \$40,000, by Melville D. Shaw, Walter D. Betters, C. N. Haskell and others.

Palestine—Ice Plant.—Palestine Ice Co. will install a 60-ton machine.

San Antonio—Bottling Works.—Chartered: Bonge & Weiss Beer Bottling Works & Manufacturing Co., capital stock \$10,000, by Max Schubert, Frank M. Brown and Frank J. Bosshardt.



Seymour—Dry Goods.—Chartered: R. P. Scarborough Dry Goods Co., capital stock \$20,000, by R. P. Scarborough and others.

Sherman—Ice Plant.—The ice company lately reported has permanently organized as the Artesian Ice & Cold Storage Co., with capital stock of \$50,000; B. L. Fielder, president, and R. S. Dorchester, secretary; will erect 50-ton ice plant, with cold-storage addition.

Texarkana—Ice Plant.—Texarkana Ice Co. will add a 75-ton machine, making its output 125 tons daily.

Waco—Ice Plant.—Waco Ice & Refrigerating Co. will add a 50-ton ice machine to its 100-ton plant.

Waxahatchie—Drug Company.—C. W. Sparks, J. S. Herring and S. Y. Matthews have incorporated Herring-Sparks Drug Co., with capital stock of \$10,000.

Weatherford—Ice Plant.—J. N. Chandler is interested in proposed erection of 40-ton ice plant.

Wharton—Ice and Electric Plants.—William Payson of San Antonio is reported to contemplate building an electric-light plant, ice plant and other industries.

Wharton—Electric-light and Water Works. It is rumored that Capt. Wm. Payson has asked for electric-light and water-works franchise.

Winnsboro—Creamery.—J. W. Quinn of Chicago has completed arrangements for organizing company to establish \$9000 creamery.

#### VIRGINIA.

Blackstone—Water-works.—Town has named September 10 as date for voting on issuance of funds for construction of water-works; P. Stith, town clerk.

Chester—Lumber Mills.—Chester Lumber Co. has been organized, with capital stock of \$25,000, to develop timber tracts by erecting mills, etc.; Geo. Burton of Waverly, president; Mr. White of Farmville, manager, and Mr. Clarke of Georgia, secretary-treasurer; Geo. S. Briggs of Norfolk, H. D. Elcheberger of Richmond and P. B. Clarke of Beach are among the directors.

Marion—Sewerage System.—W. G. McDowell of Lexington is making a preliminary survey for a sewerage system, the construction of which is not yet definite.

Newport News—Foundry.—Peninsula Foundry Co., lately noted as having purchased site for new foundry, will erect 75x200-foot building, of galvanized iron, to accommodate plant.

Newport News—Coal Pier.—Chesapeake & Ohio Railway is reported as to build another coal pier. C. E. Doyle at Richmond is general manager.

Norfolk—Grocery Company.—Chartered: Cochrane Company, capital stock \$50,000, with R. L. Cochrane, president.

Norfolk—Electrical Merchandise.—Southern Electrical Supply Co., capital stock \$100,000, reported incorporated during the week, acquires the business of A. N. Palmer & Co., dealing in electrical supplies; A. N. Palmer, manager.

Norfolk—Brick and Tile Works.—Nansemond River Brick & Tile Co., reported incorporated with \$50,000 capital last week, will continue plant that has been operated heretofore by W. H. Collins, now president of new company.

Norfolk—Drug Company.—Chartered: McCorkle Drug Co., capital \$10,000, and H. C. Hoffheimer, secretary.

Norfolk—Fertilizer Factory.—The Imperial Company (not Imperial Guano Co., as given last week) is making improvements and additions to its fertilizer factory.

Richmond—Signal Towers, etc.—J. E. & A. L. Pennock of Philadelphia, Pa., have completed plans for signal towers, coal pockets and other work for Chesapeake & Ohio Railroad at Richmond.

Richmond—Bone-meal Mill.—Dixie Manufacturing Co. has erected building, and is putting in machinery for manufacture of bone meal.

#### WEST VIRGINIA.

Central City—Glass-tumbler Factory.—Huntington Tumbler Co. has put in operation its factory, after a five years' idleness. Adolph Zihlman, Cumberland, Md., is owner.

Clarksburg—Mine Supplies.—West Virginia Mine Supply Co. has been organized, with D. R. Potter, Geo. L. Duncan, C. M. Hart, John A. Clark and others of Baltimore, Md., as directors; company will erect 50x250-foot building to cost \$10,000 and equip with mine supplies.

Davis—Pulp Mill.—West Virginia Pulp & Paper Co. has broken ground for construction of another pulp mill; will use sulphite process in manufacturing.

Grafton—Cold-storage Plant.—Armour & Co. of Chicago have leased land on which to build branch cold-storage plant.

Great Cacapon—Mineral Lands.—Mr. Chapell, mineralogist, has leased mineral lands from Michael Hinds and others.

Martinsburg—Manufacturing Plant.—Board of Trade is negotiating for the removal to Martinsburg of a Northern manufacturing plant employing 200 skilled workmen.

Morgantown—Electric-light Plant.—I. C. White, E. D. Hirschman, Frank Cox and others have bought, will enlarge and operate the Morgantown Electric Light & Power Co.'s plant.

Pool—Flour Mill.—Robt. Dame and Chas. Evans will build steam flouring mill.

#### BURNED.

Abilene, Texas.—Model Steam Laundry damaged to extent of \$2300.

Corrigan, Texas.—Allen & Williams' saw-mill; loss \$2500.

Edgar, Texas.—Gla of E. B. Carruthay of Yookum; loss \$2000.

Huntington, Ark.—Kansas & Texas Coal Co.'s ice factory; loss \$60,000.

Little Rock, Ark.—Arkansas Brick & Manufacturing Co.'s plant.

Louisville, Ky.—Standard Sanitary Co.'s plumbing-supplies plant; loss \$50,000.

Marion, Texas.—Hicks, Schultz & Co.'s cotton gin; loss \$10,000.

Price Switch, Texas.—Lee Herrington's saw-mill; loss \$2000.

Shelbyville, Tenn.—Machine shop of Robt. McGowan; was operated by Holt & Ellis.

Siloam Springs, Ark.—E. T. Wisner's planing mill; loss \$10,000.

#### BUILDING NOTES.

Abbeville, La.—School.—Besides the \$5000 lately noted as voted for erection of school, another \$5000 will be appropriated for same structure; Geo. W. Summers, secretary to council.

Accident, Md.—Church.—Zion Evangelical Lutheran Church contemplates erecting new structure; Rev. G. Bievernicht, pastor.

Aiken, S. C.—Dwelling.—Mrs. N. K. Hayes has let contract to A. W. Lane of Chicago for erection of dwelling.

Anderson, S. C.—Church.—Thos. A. Ratliff, Jr., secretary building committee Central Presbyterian Church, will open bids September 20 for construction of edifice after plans and specifications by Wilson & Edwards of Columbia, S. C. Plans can be seen at architects' office or that of Dean & Ratliff at Anderson.

Anniston, Ala.—Business Building.—Wm. H. Zinn will erect brick business building.

Asheville, N. C.—Church.—Central Methodist Church has let contract to J. M. Westall for new building to cost about \$14,000.

Atlanta, Ga.—Stores, etc.—John D. Brady will erect \$6000 frame dwelling. A. B. Steele will erect four one-story brick stores to cost \$5000.

Baltimore, Md.—Infirmary.—Geo. Archer has completed plans for and Henry Smith & Sons have contract to erect addition to Union Protestant Infirmary; will be a brick, stone and iron structure, four stories, 41x103 feet, steam or hot-water heating.

Baltimore, Md.—Apartment-house.—Chas. E. Cassell is preparing plans for proposed \$350,000 apartment-house for F. W. & John H. Trimble, to be 90x155 feet, twelve stories high, steel-cage construction, etc.

Baltimore, Md.—Warehouse.—Geo. F. Jones & Co., paper manufacturers, have accepted plans by and given contract for erection to Frank H. Callaway for a three-story warehouse 63x125 feet to cost \$15,990.

Berkeley Springs, W. Va.—Hotel.—H. H. Hunter has completed plans for hotel, three stories, seventy-five rooms, 40x107 feet, with center wing 67x87 feet.

Bristol, Tenn.—Residences.—Lynn & Kaylor will erect three residences.

Bristol, Tenn.—Residence.—Lynn & Kaylor will erect a \$2000 frame residence, not three residences, as reported recently.

Brunswick, Ga.—Postoffice.—Ambrose B. Stannard of New York has contract at \$97,875 for erection of public building at Brunswick.

Cherryville, N. C.—Church.—The Lutheran Church contemplates building an edifice to cost about \$5000; plans not secured yet.

Clarksburg, W. Va.—Hotel.—A. F. Withers & Co. of Charleston have contract to build the Waldo Hotel, to cost \$175,000; they have just completed the foundation contract; plans by Harrison Albright of Charleston.

Cooper, Texas—Bank Building.—Delta National Bank will erect office building.

El Campo, Texas—Warehouse.—Bay City (Texas) Rice Milling Co. will build rice warehouse.

El Paso, Texas—Office Building.—Walter Earhart will erect a six-story office building 40x70 feet.

Ensley, Ala.—Stable.—Gay & Vaughn will build a stable.

Houston, Texas—Hotel.—Construction of a \$150,000 hotel is proposed, and Capt. F. S. Hervey is interested.

Chase City, Va.—Sanatorium.—Hunt & Co. of Richmond have contract to erect \$95,000 sanatorium.

Chattanooga, Tenn.—Residence.—R. H. Perry has placed contract for erection of \$6000 residence.

Cordele, Ga.—Warehouse.—B. B. Pound has let contract for erection of warehouse.

Dresden, Tenn.—Store.—Joseph Loyd will erect brick store building.

Eureka Springs, Ark.—Church.—First Baptist Church contemplates erecting stone building.

Fayetteville, Ark.—Store.—A. C. Davis has prepared plans for 30x100-foot building for Carl Bros. of Prairie Grove.

Georgetown, Ky.—Residence.—Mrs. A. K. Hawkins will erect two-story brick dwelling.

Gonzales, Texas.—Cottages, etc.—Gonzales Cotton Mills is about to contract for twenty cottages and a warehouse.

Greensboro, N. C.—Business Buildings.—Holton-Helms Drug Co. has let contract to J. N. Longest for erection of \$15,000 three-story business building. D. R. Huffines has let contract to J. N. Longest for erection of three-story mercantile building.

Jacksonville, Fla.—Hotel.—Robert W. Simms has let contract to W. A. Miller for erection of hotel 70x105 feet, six stories, fifty guestrooms, gas heating, electric lighting, etc., to cost \$35,000.

Jacksonville, Fla.—Theater.—Jas. D. Burbridge will erect theater 105 feet square, of frame, gravel roofing, seating for 1300, etc.

Jonesville, S. C.—Bank Building.—Frank P. Milburn of Columbia is preparing plans for Bank of Jonesville's building reported last week.

Louisville, Ky.—Storehouse.—J. J. Gaffney has prepared plans for storehouse for Mrs. Burns.

Madison, Fla.—Hotel.—Chartered: Merchant Hotel Co., capital \$8000, by A. H. West, J. P. Dial and others.

Memphis, Tenn.—Dwellings.—R. Brinkley Snowden will erect \$10,000 and \$7000 dwelling.

Memphis, Tenn.—Residence.—O. B. Polk will erect \$7500 row of residences.

Mockerson, Tenn.—Business Building.—W. W. Richardson will erect business building.

Morgantown, W. Va.—Publishing House.—Acme Publishing Co. will erect three-story and basement house, with 2000-pound power elevator.

Morristown, Tenn.—Residence.—Rev. W. C. Hale will build two-story brick business structure.

Nashville, Ark.—Business Houses.—F. M. Buxton will erect two brick business buildings. J. B. Hill will erect business house.

Norfolk, Va.—Warehouse.—It is proposed to organize company to build a general storage warehouse; it is said that \$150,000 has been subscribed.

Paducah, Ky.—Business Block.—E. B. Harbourn will erect brick business block.

Pine Bluff, Ark.—Temple.—A. F. and A. O. M., M. H. Clark (colored), grand master, will erect a \$25,000 temple.

Plymouth, N. C.—School.—A \$5000 school building will be erected. Probably Dr. John Hampton can give information.

Richmond, Ky.—Dwellings.—Isaac Barnett will erect several dwellings.

Richmond, Va.—Prison.—It is contemplated to expend \$300,000 for enlarging penitentiary buildings. Address "Committee on Asylums and Prisons."

Richmond, Va.—Residence.—Harvey E. Brown has accepted plans for proposed residence.

San Antonio, Texas—Church.—Travis Park M. E. Church will erect a \$20,000 addition, not a \$35,000 edifice as stated lately. John M. Moore is pastor.

San Antonio, Texas—Residence.—Leroy G. Denman denies the recent report that he intends erecting \$20,000 residence.

Van Buren, Ark.—Business Building.—Rich Reece will build three one-story brick business houses 22x50 feet.

Vienna, Ga.—Hotel.—J. W. Roberts will build hotel, three stories, granite front, etc.

Washington, D. C.—Schools.—District commissioners will open bids September 21 for

erection of two school buildings of four rooms each. Send for plans, etc., addressing Wm. Tindall, secretary to commissioners.

Washington, D. C.—Apartment-house, etc. Spelden & Spelden are preparing plans for addition to Georgetown Medical School; also for apartment-house for Bernard Wells.

#### RAILROAD CONSTRUCTION

##### Railways.

Alexandria, La.—The Shreveport & Red River Valley Railroad is practically completed to Pineville, on the Red river, opposite Alexandria, and train service will begin in a few days between Shreveport and this point. P. McElvried at Shreveport is vice-president of the company.

Ashburn, Ga.—J. C. Turner, one of the promoters of the railroad between Ashburn and Bainbridge, informs the Manufacturers' Record that it is expected to construct the road as soon as the necessary preliminaries are arranged. The estimated length of the road is ninety miles, and it is to be built by way of Sylvester and Camilla. Mr. Turner may be addressed at Camilla.

Birmingham, Ala.—W. H. Wells, engineer of the Southern Railway Co., writes the Manufacturers' Record that a road about thirteen miles in length is to be constructed from a point on the Mobile & Ohio Railroad to the property of the Central Iron & Coal Co. It will be built under a charter secured for the Warrior Southern Railroad. Work is to begin on the line in about thirty days.

Bristol, Tenn.—A dispatch from New York states that work has begun upon an extension of the Norfolk & Western Railroad from Bristol to Knoxville, a distance of about 106 miles. Henry Fink at 40 Exchange Place, New York, is president of the company.

Carrollton, Ala.—John T. Cochrane, president of the Carrollton Shortline Railroad Co., advises the Manufacturers' Record that this road may be extended to the Bigbee river, an estimated distance of eighteen miles. No arrangements have been made as yet.

Cleburne, Texas.—The business men of Cleburne are negotiating with the International & Great Northern Railroad Co. with a view to securing a branch of this system to Cleburne. J. L. Cleveland of Cleburne is one of those interested.

Cuthbert, Ga.—The work of building the extension of the Georgia, Florida & Alabama Railroad has begun between Cuthbert and Arlington, a distance of thirty miles. J. P. Williams at Savannah is president of the company.

Dallas, Texas.—Work is progressing rapidly on the electric road between Dallas and Fort Worth, and rails are being received for the track. Contracts for the power-house have been let. George T. Bishop is president of the company, and may be addressed at Fort Worth.

Dallas, Texas.—The St. Louis Southwestern Railway Co. has made a proposition to construct its line to Dallas upon certain conditions. It is stated that most of the right of way has been obtained. F. H. Britton at St. Louis is president of the company.

Edinburg, Va.—It is reported that a Northern syndicate has secured control of the narrow-gauge railroad extending from Edinburg to an iron furnace in the vicinity, and will change it to standard gauge and possibly extend into West Virginia.

El Paso, Texas.—The Chicago, Rock Island & Texas Railroad, which is a division of the Chicago, Rock Island & Pacific system, is completed a distance of 150 miles between Liberal, Kans., and El Paso. Track is being laid at a rate of two miles a day. W. R. Stubbs is one of the principal contractors. S. B. Hovey at Fort Worth, Texas is vice-president of the company.

El Paso, Texas.—The El Paso Electric Railway Co. has been organized, with \$750,000 capital stock. Among those interested are Leigh Clark and John Franklin.

Folkston, Ga.—It is expected to complete the road being constructed by the Plant Railway & Steamship Co. between Jessup and Folkston by October 1. The estimated length of the line is fifty-four miles.

Friar's Point, Miss.—The engineer of the Alabama, Mississippi Valley & Gulf Railroad is H. P. Farrar, who may be addressed at Jackson, Tenn. Surveys have been completed for this road.

Greenville, S. C.—The promoters of the electric railroad between Greenville and Piedmont have applied for a charter under the title of the Piedmont Traction Co. Among those interested are George M. Bunting and Joseph S. Keen.

Harrison, Ark.—Bids are being received for grading and mason work on an extension of the St. Louis & North Arkansas Railroad from Harrison southeast. The estimated length of the extension is sixty miles. F. W. Lee at Eureka Springs, Ark., is chief engineer.

Houma, La.—The promoters of the electric railway between Houma and Thibodaux, La., have secured a franchise to build the line. It is expected to complete it eventually to Donaldsonville. Among those interested are L. H. Lancaster of Thibodaux and C. P. Young of New Orleans.

Jackson, Miss.—Illinois Central extensions in Mississippi include a line between Tutwiler and Lake Cormorant, a distance of sixty-seven miles. It is expected to complete it during the present year. The company is also constructing a second track between Jackson and Crystal Springs, a distance of twenty-five miles. David Sloan at Chicago is chief engineer.

Keyser, W. Va.—The Potomac & Potomac Railroad Co. has elected Eugene Histon of New York, president; F. M. Reynolds of Keyser, vice-president, and Thomas Pownall of Cumberland, Md., treasurer. It is understood that the railroad is to be built in the interest of the United States Leather Co., which controls a number of tanneries along the proposed route. It is to extend from Keyser to a point in Eastern West Virginia, an estimated distance of forty miles.

Laurel Hill, Ala.—It is reported that a contract has been let to extend what has been known as the Yellow River Railroad from its present terminus to Wingo, Ala., an estimated distance of fourteen miles.

Lufkin, Texas.—It is announced that the St. Louis Southwestern Railroad Co. has decided to build the line under consideration between Lufkin and Beaumont, an estimated distance of 115 miles. F. H. Britton at St. Louis is president of the company.

Monroe, Ga.—The plan to extend the Seaboard Air Line is reported to be again agitated by the business men of this town. A. J. Arnold and G. W. Felker are among those interested. It is proposed to extend what is known as the Lawrenceville branch to Monroe.

Nashville, Tenn.—The Nashville Electric Railway Co. may construct an extension of its trolley system to the town of Eastland, in the suburbs, a distance of about one mile. Percy Warner is president of the company.

Natchez, Miss.—It is reported that New Orleans capitalists have become interested in the plan to build an electric railway in Natchez, of which H. J. Johnson is one of the promoters.

New Orleans, La.—It is reported that a scheme is under way to construct an electric railway from St. Tammany parish to New Orleans in connection with a water-works system. Among those understood to be interested are Hon. Lloyd Posey of St. Louis, also Messrs. Meacham, Cameron & Co. of New York.

Oakland, Md.—The Garrett County Water & Light Co. has been formed, with \$100,000 capital stock. In addition to securing right to supply water and light, the company also proposes building an electric railroad between Deer Park and Oakland, an estimated distance of seven miles. George C. Sturgis of Morgantown, W. Va., and F. A. Thayer of Oakland are among those interested.

Prestonsburg, Ky.—A correspondent of the Manufacturers' Record writes that the question of extending what is known as the Big Sandy division of the Chesapeake & Ohio system to Prestonsburg is being considered, but as yet no decision has been reached. George W. Stevens at Richmond, Va., is president of the company.

Richmond, Texas.—The State authorities are constructing a railroad about two miles long, which will connect a sugar plant owned by the State with the Southern Pacific system.

Sherman, Texas.—Messrs. Johnson Bros. & Faught of St. Elmo, Ill., have secured an additional contract to construct an extension of the St. Louis & San Francisco Railroad from Sherman to Fort Worth. The first section will be fifty-three miles long. The line is termed the Red River, Texas & Southern. J. F. Hinckley of Sherman is chief engineer.

Sneedville, Tenn.—Surveys on the Powell's Mountain Mineral Railroad are nearly completed. The estimated length of the road is 100 miles. Surveys extend from a connection with the Knoxville Gap & Louisville Railroad to St. Paul, Va.

St. Louis, Mo.—An officer of the Terminal Railroad Association informs the Manufacturers' Record that about five miles of extension will be constructed, and that some of the contracts have already been let. Work is to be completed during the present

year. W. S. McChesney, Jr., is vice-president.

Union, N. C.—A correspondent of the Manufacturers' Record writes that a railroad is being surveyed between Union and Ahsokie, an estimated distance of five miles. J. E. Matthews of Union is reported as interested in the project.

Washington, D. C.—It is reported that William Everett of Cleveland, Ohio, has become interested in the plan to complete an electric railway system from Washington, D. C., to Baltimore by building from a suburb of Washington to Ellicott City. The Baltimore Security & Trading Co., in which N. P. Bond is interested, it is understood may build a portion of the line.

Westminster, Md.—Right of way and subscriptions to the capital stock are being secured by the promoters of the railroad between Washington, Westminster and Gettysburg. This is the project in which J. B. Colgrove of Washington is interested.

Wichita Falls, Texas.—It is announced that Johnson Bros. & Faught have secured the contract to build the Arkansas & Choctaw Railroad from Arkinda to Wichita Falls, an estimated distance of 226 miles. The estimated cost of the work is \$2,000,000, and it is to be completed as soon as possible. The Choctaw Construction Co., of which John Scullin of St. Louis is at the head, awarded the contract.

Yazoo City, Miss.—The Board of Trade of Vicksburg is negotiating with the Illinois Central with a view to securing an extension about twenty-six miles in length between Redwood and Valley Stations. If the line is built it will give Vicksburg a direct connection with the Illinois Central. R. L. Crook and W. H. Fitzhugh are members of the committee in charge of the matter.

#### Street Railways.

Birmingham, Ala.—The Birmingham Light & Power Co. has purchased a portion of the rails for the improvements which it contemplates. Work is now in progress on the rebuilding on a part of the system. Robert Jemison of Birmingham is president of the company.

Durham, N. C.—The Durham Traction Co. has awarded the contract to construct eight miles of its electric line in the city and suburbs. R. H. Wright is president of the company.

### Machinery, Proposals and Supplies Wanted.

**Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.**

Air Compressor.—W. N. Brown, Monticello, Ark., wants second-hand air compressor and lathes.

Boiler and Engine.—Eufaula Oil & Fertilizer Co., Eufaula, Ala., wants to buy 10-horse-power portable engine and boiler; prompt shipment.

Boiler and Engine.—Pennant Knitting Co., Shepherdstown, W. Va., wants to buy 10-horse-power and a 16 or 18 horse-power horizontal engine, or will buy kerosene or oil engine and small boiler for heating, second-hand equipment in good condition.

Boiler and Engine.—W. D. Peoples, Emory, Texas, will probably want boiler and engine, small size.

Boiler and Engine.—W. H. Schank & Co., Brevard, N. C., want prices on boiler and engine.

Bridge.—See "Railway Equipment."

Building Supplies.—Henry Warten, Athens, Ala., wants slate roofing, furnace and mantels for \$10,000 residence.

Button-making Machinery.—W. C. Neville, Box 423, Houston, Texas, wants addresses of makers of button machinery, especially pearl-button machinery.

Candy Factory.—Rome (Ga.) Candy Factory, Box 396, wants bids on machinery for 200 to 300 pounds candy per hour, for baking bread (steam) 1000 to 1500 pounds daily,

dough breaker and mixer, and for rebolling molasses.

Church Furniture.—See "Seating."

Coal.—See "Iron."

Coffee Mill.—Edgar W. Hayes, West Nashville, Tenn., will want machinery such as is used for coffee mills; also packages, labels and other supplies.

Dam Construction.—Collier & Brown, 1112 English-American Building, Atlanta, Ga., will open bids September 16 on construction of dam at Roswell, Ga.; work will comprise about 250 cubic yards of cement masonry and 1500 cubic yards dry-laid stone; specifications on application.

Electric-light Plant.—Mill-Haven Company, Savannah, Ga., invites bids on electric-lighting plant of sixteen to twenty arc lamps.

Elevator.—Acme Publishing Co., Morgantown, W. Va. (not Virginia, as erroneously given in previous notice), wants to buy power elevator of 2000 pounds capacity.

Engine.—Webb & Smith, McNatt, N. C., are in market for 15-horse-power engine, second-hand.

Fire-arms.—John H. G. Cochrane, Box 73, Gainesville, Ga., wants information as to revolver of 116 shots capacity per minute.

Fire-protection Equipment.—W. N. Brown, Monticello, Ark., wants second-hand sprinkler system for cotton mill, with two 10,000-gallon tanks and piping.

General Machinery.—John W. Stanford, Company A, Sixth U. S. Infantry, Calvo (by way of Hilo), P. I., will expend about \$150,000 during next two years for saw-mills, sugar and mining machinery, agricultural implements, brick machinery, cotton gins, oil mills, woodworking machinery, piping, etc.

Harness Supplies.—W. J. Wasson, Ethel, Miss., wants addresses of makers of harness-manufacturing supplies; also wants book of instruction on harness manufacture.

Heating Plant.—See "Building Supplies."

Ice Plant.—Palestine (Texas) Ice Co. is in market for 60-ton ice machine with all fixtures, etc., complete.

Implement Makers.—M. M. Ritch and M. Morgan, Laurinburg, N. C., want bids on manufacture of a cultivator.

Iron.—F. Drueck, care Jas. Watson & Co., Middlesboro-on-Tees, England, wants to arrange contracts for handling American coal and iron in Italy.

Lamps.—W. T. Beamguard, Clover, S. C., wants catalogues and price-lists of street lamps, either kerosene or gasoline.

Laundry.—Samuel T. Hill, 614 Bute street, Norfolk, Va., wants quotations on steam-laundry plant and on hand laundry.

Machine Shops.—St. Joseph (Mo.) Stockyards Co. expects to be in the market for large side-wheel lathe, engine lathe, planers, drill presses, etc.

Machine Tools.—Globe Iron Bedstead Manufacturing Co., Birmingham, Ala., is in market for shaper, planer, and combined punch and shear.

Machine Tools.—See "Air Compressor."

Medicine Factory.—John H. G. Cochrane, Box 73, Gainesville, Ga., wants small capacity outfit for pulverizing herbs and pressing same into pellets.

Metal-working Machinery.—A. H. McFadyen, Waynesville, N. C., wants machine for cutting electric mica into patterns.

Mining Equipment.—Pilot Rock Zinc & Lead Co. (of Dodd City, Ark.) will soon want a steam drill; Chicago office at 119 La Salle street.

Mining Equipment.—R. N. A. Ross, Grays, Ky., is in market for twelve to fifteen tons of 12 to 16-pound relaying T rails; also scales, screens, drum, etc.

Pearl-button Machinery.—See "Button Machinery."

Pulverizing Machinery.—See "Medicine Factory."

Pumps.—G. E. McNeill, Catawba, N. C., wants catalogues and prices of steam pumps.

Pump.—W. C. N. Randolph, Jr., superintendent city water-works, Lynchburg, Va., invites proposals on furnishing 3,000,000-gallon pump and water-wheel on 12-foot head and 365-foot lift.

Railway Equipment.—See "Mining Equipment."

Railway Equipment.—Leroy Springs, Lancaster & Chester Railway, Lancaster, S. C., will be in market for coaches and freight cars, standard gauge.

Railway Equipment.—J. C. Miller, Huntingtown, W. Va., is in market for standard-gauge railroad bridge of 180-foot span, eight miles 30 or 35-pound new or relaying rails, 25-ton (Climax) locomotive, 33-inch gauge, and

twenty flat cars, 36-inch gauge, ten tons capacity.

Roofing.—See "Building Supplies."

Scales.—See "Mining Equipment."

Seating.—Rufus C. Jackson, secretary deacons of First Presbyterian Church, Mt. Pleasant, Tenn., wants bids on church pews. Street Lamps.—See "Lamps."

Tanks.—See "Fire-protection Equipment."

Water-wheel.—See "Pump."

Well-drilling.—A. C. Cook, Scott County Oil & Development Co., Georgetown, Ky., wants machinery for drilling for oil; also wants to engage expert driller.

Well-drilling.—G. C. Harris, Bristol, Tenn., is in market for well-drillers and makers of machinery for drilling.

Well-drilling.—W. H. Henderson, secretary Eubanks Oil, Gas & Mineral Co., Lexington, Ky., will open bids September 15 for drilling oil wells from 1000 to 1500 feet deep, including casing and not including casing.

Woodworking Machinery.—W. H. Schank & Co., Brevard, N. C., wants prices on woodworking machinery.

### TRADE LITERATURE.

Keeps Improving.—This is the case with the "Mechanic," published monthly by the H. B. Smith Machine Co. of Smithville, N. J. While not a large publication, its contents are carefully selected and the articles ably written. It is what it claims to be—a journal of interest to machine workers.

A Work of Art.—A description of any manufacturing or business enterprise published these days must be of high merit to be superior to most of the catalogues and other books issued for the trade. It can well be said that the description of the Drop Forgings issued by Messrs. J. H. Williams & Co. of Brooklyn is a work of art in every sense of the word. The cover contains the title, also an appropriate design in imitation of ivory. The illustrations of the interior and exterior of its factory closely resemble etchings, while the half-tone engravings are of the very best. The catalogue gives a description of the products on which this concern prides itself with a list of various sizes and prices.

Economy in the Machine Shop.—The application of electric power has been one of the greatest factors for reducing cost of production in recent years of manufactured articles. In the machine shops it has really become indispensable. Some of the advantages of the use of electric power are detailed in the latest catalogue issued by the Northern Electrical Manufacturing Co. of Madison, Wis. The work illustrates the various motors turned out by this corporation, also contains some excellent views showing the application of the motors for various purposes. The company has been successful in equipping entire plants with its apparatus, and really remarkable results have been achieved.

As Might Be Expected.—Any descriptive or other matter which comes from the publishing department of the Westinghouse Companies of Pittsburgh is always of superior merit. Its display at the Pan-American Exposition is illustrated and described, as might be expected, in a highly artistic manner. The pamphlet is one of such interest that even the novice in electrical apparatus is attracted to its contents. The extensive installations at Niagara and other water-powers of the United States, as well as the devices of the Union Switch & Signal Co., power brakes, engines and other apparatus, are referred to. In the back part of the book is a beautifully-engraved map of the exposition.

Protection that Protects.—The recent robbery of the works of the Selby Smelting Co. at Crockett, Cal., emphasizes the necessity of proper protection for treasure and other valuables. In spite of improvements made in vault and other work, an alarm will add to the protection. A microphone attachment transmits the slightest sound and makes it audible at a considerable distance. Consequently, where this device is utilized it is practically impossible for a robbery to be committed if the watchman listens at the receiver as he should do at certain periods during the night. The microphone is a sort of transmitter so delicate that it is invaluable as a safety appliance for banks, store-houses and other places where valuables are kept. The Ericsson Telephone Co., 236 Broadway, New York, will be glad to furnish further particulars of the system to those interested. Part 6 of the Ericsson series has recently been published, with valuable information relative to the telephone.



## FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

## September Disbursements.

September interest and dividend disbursements at Baltimore will aggregate nearly \$1,000,000. They include interest on street-railway bonds to be paid by Messrs. Alexander Brown & Sons and the Mercantile Trust Co., \$200,000 on the bonds of the Mount Vernon-Woodberry Cotton Duck Co. by the Continental Trust Co., and interest on Queen Anne's Railroad bonds and the dividend of the Alabama Consolidated Coal & Iron Co. The latter disbursements are made by the International Trust Co., and aggregate about \$57,000.

## New Corporations.

The business men of Warsaw, Va., are organizing a bank in that town.

The Jefferson Mutual Insurance Co. of Pine Bluff, Ark., has organized a branch at Little Rock, Ark., with Charles H. Bollinger, president.

The Woodmen Building Association has been formed at McComb City, Miss., with \$30,000 capital stock. W. E. Bradshaw is one of the promoters.

Arrangements have been made to open the following national banks in Texas: First National at Throckmorton, capitalized at \$25,000, and State National at Quanah, with \$50,000 capital stock. W. F. Andrews is interested in the first-named bank, and A. H. Wood in the one organized at Quanah.

## New Securities.

George A. Heywood has purchased the issue of \$10,000 in 5 per cent. bonds in Bristol, Va., paying 101.375.

The State authorities have approved of the issue of \$12,500 in bonds of Denton, Texas. The mayor may be addressed.

Bids will be received until September 23 for \$25,000 in 5 per cent. bonds by the town of Wilson, N. C. D. Herring, mayor, may be addressed.

A. W. Wilson will receive communications relative to an issue of \$5000 in 6 per cent. improvement bonds offered for sale by Dodd City, Texas.

The Piedmont Exposition Co. of Atlanta, Ga., has decided to issue \$60,000 in 5 per cent. bonds to refund same amount bearing 7 per cent. interest.

The State authorities have approved of the issue of \$17,000 in bonds to be issued by the town of Dublin, Texas. The town clerk will give further information.

The Lowndes Savings Bank of Clarksburg, W. Va., has purchased the issue of \$40,000 in 4 per cent. bonds issued by Clarksburg, paying a premium of \$1000.

The State authorities have approved an issue of \$80,000 improvement bonds for Victoria county, Texas. The board of commissioners may be addressed at Victoria.

It is announced that the issue of \$6000 in 5 per cent. bonds of Velasco, Texas, will be advertised for sale in the near future. The mayor will give further particulars.

The issue of bonds which will be probably placed on the market by the city of Mobile, Ala., will be \$65,000, bearing 4 per cent. interest. The mayor may be addressed.

Messrs. Seasongood & Mayer of Cincinnati, Ohio, have purchased the issue of \$14,000 in 5 per cent. bonds of Wake county, North Carolina, paying a premium of \$980.

The election recently held at Jacksonville, Fla., resulted in favor of issuing bonds to the extent of \$400,000. P. A. Holt, acting mayor, may be addressed relative to the date of sale.

The Manufacturers' Record is officially advised that the bond issue of Newberry, S. C., will amount to \$25,000, and will bear 4 per cent. interest. O. Klittner, mayor, may be addressed.

A bill has been approved by the Texas legislature authorizing the city of Austin, Texas, to refund indebtedness amounting to about \$1,000,000. It is probable that bonds will be issued for the purpose. The mayor may be addressed.

## Financial Notes.

The regular quarterly dividend of 1 1/2 per cent. on the preferred stock of the Alabama Consolidated Coal & Iron Co. was paid September 1.

The Atlantic Coast Line has retired \$2,500,000 in 4 per cent. certificates with funds obtained from the sale of its interest in the Richmond, Fredericksburg & Potomac Railroad and money in its treasury.

The reports of bank clearings from the groups of clearing-house cities for the week ending August 24 show a remarkable increase in the Southern States as compared with the same week in 1900. It amounts to 35.3 per cent.—larger than any other group in the country, with one exception, the Middle States.

## SOUTHERN COTTON-MILL STOCKS.

Quotations furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending September 3.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.)	91	93 1/2
Allen Mfg. Co. (S. C.)	90	93 1/2
American Spinning Co. (S. C.)	103	109
Anderson Cotton Mills (S. C.)	103	109
Arkwright Mills (S. C.)	117	121
Augusta Factory (Ga.)	70	72
Avondale Mills (Ala.)	82 1/2	86
Belton Mills (S. C.)	101 1/2	105
Bennettsville Mfg. Co. (S. C.)	100	103
Cabarrus Cotton Mills (N. C.)	120	130
Clifton Mfg. Co. (S. C.)	175	180
Clinton Cotton Mills (S. C.)	121	125
Courtenay Mfg. Co. (S. C.)	117	120
Dallas Mfg. Co. (Ala.)	90	100
Darlington Mfg. Co. (S. C.)	96	100
Eagle & Phenix Mills (Ga.)	100	106
Enoree Mfg. Co. (S. C.)	112 1/2	116
Enterprise Mfg. Co. (Ga.)	100	106
F. W. Poe Mfg. Co. (S. C.)	116 1/2	120
Gaffney Mfg. Co. (S. C.)	112	116
Granby Cotton Mills (S. C.)	100	106
Graniteville Mfg. Co. (S. C.)	160	165
Greenwood Cotton Mills (S. C.)	100	101
Grendel Mills (S. C.)	100	103 1/2
Henderson Cotton Mills (N. C.)	129	135
Hennietta Mills (N. C.)	200	202
John P. King Mfg. Co. (S. C.)	96	100
Langley Mfg. Co. (S. C.)	100	110
Laurens Cotton Mills (S. C.)	139	145
Lockhart Mills (S. C.)	107 1/2	110
Loray Mills (N. C.)	86	90
Louise Mills (N. C.)	100 1/2	105
Lynchburg Cotton Mills (Va.)	125	130
Lynchburg Cotton Mills (Va.) Pfd.	145	150
Manchester Cotton Mills (S. C.)	115	120
Mayo Mills (N. C.)	150	155
McColl Mfg. Co. (S. C.)	100 1/2	105
Newberry Cotton Mills (S. C.)	113 1/2	118
Orr Cotton Mills (S. C.)	102	106
Pacolet Mfg. Co. (S. C.)	200	202
Pelzer Mfg. Co. (S. C.)	172	180
Piedmont Mfg. Co. (S. C.)	180	185
Raleigh Cotton Mills (N. C.)	116	120
Richland Cotton Mills (S. C.)	104	107
Richland Cotton Mills (S. C.) Pfd.	100	104
Roanoke Mills (N. C.)	90	95
Sibley Mfg. Co. (Ga.)	75	78
Southern Cotton Mills (N. C.)	96	100
Spartan Mills (S. C.)	120	125
Trion Mfg. Co. (Ga.)	125	135
Tucapau Mills (S. C.)	128	135
Union Cotton Mills (S. C.)	148	155
Union Cotton Mills (S. C.) Pfd.	100 1/2	105 1/2
Victor Mfg. Co. (S. C.)	106	110
Warren Mfg. Co. (S. C.)	90	95
Warren Mfg. Co. (S. C.) Pfd.	105	110
Washington Mills (Va.)	100	105
Whitney Mfg. Co. (S. C.)	120	125
Wilmington Cot. Mills (N. C.) Pfd.	100	105
Wiscasset Mills (N. C.)	115	120

Managers of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises and needing machinery or supplies of any kind will find it profitable to consult the advertising columns of the Manufacturers' Record. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

Work has begun at Newport News upon the armored cruisers Maryland and West Virginia for the United States Navy. The vessels will be 502 feet long on load water line, 69 feet 6 inches broad and 13,680 tons displacement.

The Southern Car & Foundry Co. of Anniston, Ala., is filling an order for several thousand oil boxes for a car-manufacturing plant at Pittsburg, Pa. This is something of a reversal of the usual order.

Dr. David T. Day of the United States Geological Survey has been at Charleston arranging to transfer to the exposition there in December the United States government's mineral exhibit now at Buffalo.

Mecklenburg county, North Carolina, outside of Charlotte township, returns for taxes this year \$3,329,954, an increase of more than \$127,000 over the valuation of 1900.

During the year ended with August 373 vessels loaded 136,875 tons of bunker coal, valued at \$410,625, at Newport News, Va.

A convention of men interested in naval stores business in Georgia and Florida will be held at Jacksonville, Fla., on September 10.

## Reduced Rates to Cleveland via Pennsylvania Railroad, Account G. A. R. Encampment.

On account of the Thirty-fifth Annual Encampment of the Grand Army of the Republic, to be held at Cleveland, Ohio, September 10 to 14, inclusive, the Pennsylvania Railroad Co. will sell excursion tickets to Cleveland from stations on its line at greatly reduced rates.

Tickets will be sold and good going September 8 to 12, inclusive; good to return until September 15, inclusive; but by depositing ticket with joint agent at Cleveland prior to noon of September 15, and the payment of fifty cents, return limit may be extended to October 8, inclusive.

For specific rates and further information apply to ticket agents.

## Pennsylvania Railroad Special Excursions to Pan-American Exposition

The Pennsylvania Railroad Co. will run special excursions to Buffalo on account of the Pan-American Exposition from Baltimore and adjoining territory on September 5, 11, 17 and 26. Round-trip tickets, good going only on special train leaving Baltimore 9.05 A. M. and York 10.43 A. M., and on local trains connecting therewith, and good to return on regular trains within seven days, including day of excursion, will be sold at rate of \$10 from Baltimore, and proportionate rates from other points. Tickets will be good for passage in parlor cars and sleeping cars on payment of usual Pullman rates. Stop of thirty minutes will be made at Williamsport for luncheon. For specific time and rates, consult local ticket agents.

## TOUR TO THE PACIFIC COAST.

Another Opportunity to Visit California Under the Auspices of the Pennsylvania Railroad's Personally-Conducted System.

In view of the great popularity of transcontinental travel under the personally-conducted system, as evinced in the recent Pennsylvania Railroad tour to the Pacific coast and Canadian Northwest, that company has decided to run another tour to the Pacific coast, including in the itinerary a visit to the world-famous Grand Canon of Arizona, in the early fall. The tour will leave Baltimore on Monday, September 23, and reach home Tuesday, October 22.

As in former tours to California under the auspices of the Pennsylvania Railroad, a special train, composed of the highest class of Pullman equipment, will be utilized during the entire trip. Excellent meals will be served in the dining cars attached to the train during the entire journey, except during the stops at San Francisco and in Chicago. An ob-

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servation car will appeal to all who delight in scenery. Few trips afford so great a diversity in nature's beauties as the one outlined below. Westward bound, the tourists will pass through the wild slopes of the Colorado Rockies, around the Great Salt Lake, and over the fastnesses of the Sierra Nevada. After visiting all the beautiful resorts on the sunny California slopes, the eastward journey will be through the Arizona desert to the Grand Canon of Arizona. Its beauties cannot be painted in mere words. Magnificent in coloring, awful in its depths, it stands among the natural wonders of the world. Thence across the plains to St. Louis, and eastward through Illinois, Indiana, Ohio and Pennsylvania, the tourists reach their destination just thirty days after leaving home.

The various transcontinental lines having made low rates on account of the General Triennial Convention of the Protestant Episcopal Church, the Pennsylvania Railroad Co. is enabled to offer this superb vacation trip at the low rate of \$185 for the round trip from Baltimore or any point on Pennsylvania Railroad east of Pittsburg, one in a berth, and \$165 for the round trip, two persons occupying the same berth.

Diagrams are now open, and as the number who can be accommodated will be strictly limited, names should be registered immediately.

For further information and descriptive pamphlet, apply to George W. Boyd, Assistant General Passenger Agent, Broad Street Station, Philadelphia, or B. Courlander, Jr., P. A. B. D., northeast corner Baltimore and Calvert streets, Baltimore, Md.

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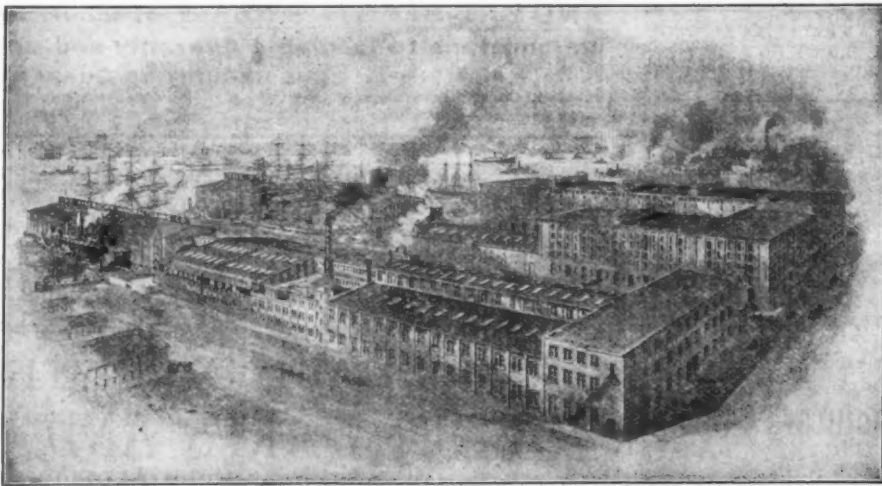
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### PROPOSALS.

ATLANTA, GA., August 28, 1901.

PROPOSALS for constructing the addition to the stone dam at Roswell, Ga., for the Roswell Manufacturing Co., will be received by Collier & Brown, Engineers, Atlanta, Ga., until September 16, 1901. The approximate amount of stone work will be 250 cubic yards of cement masonry and 1500 cubic yards of dry laid stone. Specifications and information furnished on application.

### Bids for Oil Well Drilling.

The Eubanks Oil Gas & Mineral Co. of Lexington, Ky., will accept bids from Oil Well Drillers until September 15th, 1901. Bids must be sent at once to W. H. Hender-on, Sec'y, Eubanks, Ky. Bids must be for drilling wells from 1000 to 1500 feet. Bid, including casing, and also casing not included. Contractors to furnish all tools and machinery and transportation to oil fields.

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To the Holders of Preferred and Common Stock of the American Cotton Oil Co.:

Holders, to a large amount, of Preferred and Common Stock of the American Cotton Oil Co. have entered into a Stockholders' Agreement (dated July 22, 1901, and lodged with the Depository) for the purpose of furthering a consolidation or other disposition of property of, or the acquisition or lease of property by, the American Cotton Oil Co., and for the advancement of the interests of depositing stockholders through united action, whereby their respective holdings shall be held and managed in bulk during the period of the Agreement, and better results be secured than by individual action.

The undersigned have consented to act as a Committee under said Agreement, and hereby afford holders of the Preferred and Common Stock of the American Cotton Oil Co. the opportunity of participating in the benefits of said Agreement by thereunder depositing their stock with the First National Bank of the City of New York, as Depository, on or before the 30th day of September, 1901.

Negotiable Certificates of Deposit will be issued for the deposited stock.

Copies of the said Stockholders' Agreement may be obtained from the Secretary of the Committee.

Dated New York, August 1, 1901.

GEORGE AUSTIN MORRISON,

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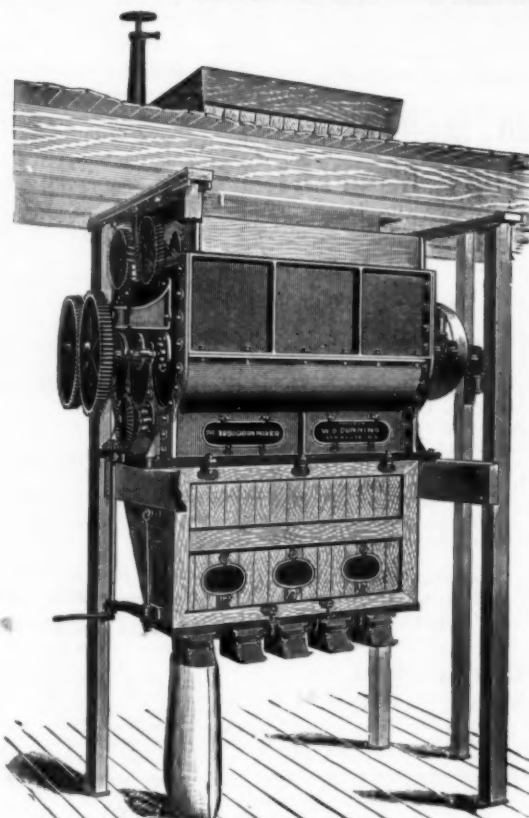
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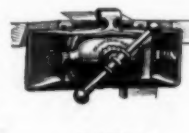
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For CLASSIFIED INDEX See  
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and 17.

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Alexander, S. B., Jr., Co.	76					Incandescent Electric Light	75	Murray Iron Works	17	Smythe, S. R., Co.	6
Allington & Curtis Mfg. Co.	69					Incandescent Electric Light	75	Murray Iron Works	17	Soule Steam Pipe Work Co.	83
Alpha Photo-Engraving Co.	69					Incandescent Electric Light	75	Murray Iron Works	17	Southern Engine & Boiler Wks.	11
Alpha Portland Cement Co.	8					Incandescent Electric Light	75	Murray Iron Works	17	Southern Iron & Equipment Co.	11
Alsing, J. R., Co.	54					Incandescent Electric Light	75	Murray Iron Works	17	Southern Railway Co.	41
American	69					Incandescent Electric Light	75	Murray Iron Works	17	Southern State Trust Co.	37
American Arithmetic Co.	19					Incandescent Electric Light	75	Murray Iron Works	17	Southway Fdy. & Mch. Co.	40
American Blower Co.	7					Incandescent Electric Light	75	Murray Iron Works	17	Spantburg Loom Harness Co.	69
American Bridge Co.	34					Incandescent Electric Light	75	Murray Iron Works	17	Speidel, J. G.	40
American Cement Co.	8					Incandescent Electric Light	75	Murray Iron Works	17	Speer, W. E.	40
American Cotton Oil Co.	38					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Diam'd Rock Drill Co.	55					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Electric Fuse Co.	75					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Amer. Elec. Sup. & Mfg. Co.	43					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Inspector Co.	9					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Iron & Steel Mfg. Co.	47					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Locomotive Co.	13					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Mfg. Co.	37					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Sheet Steel Co.	36					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Ship Windlass Co.	36					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Spiral Pipe Works	56					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Steam Gauge & Valve	20					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Steel Hoop Co.	6					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Supply Co.	67					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Tool Works Co.	39					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
American Type Founders Co.	69					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Andrews, Perry, & Bro.	70					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Arctic Machine Co.	29					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Armitage Mfg. Co.	62					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Armstrong, R. S., & Bro.	44					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Asher, A.	45					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Asphalt Ready Roofing Co.	62					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Associated Expanded Metal Co.	62					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Atkinson Machine Co., The A. T.	65					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Atkins, E. C., & Co.	50					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Atlantic Transport Co.	69					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Atlas Engine Works	17					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Atlas Pipe Wrench Co.	70					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Audit Co. of New York	38					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Aultman Co.	10					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
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Austin Separator Co.	22					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
						Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Babcock, H. H., Co.	75					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Babcock & Wilcox Co.	19					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bacon Air Lift Co.	70					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Badger, E. B., & Sons Co.	61					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bader, Adamson & Co.	47					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Baer, Richard P., & Co.	53					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bailey-Lebby Co.	58					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bailey, John T., & Co.	36					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Baird, U., Machinery Co.	44					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Baker, H. C., & Co.	44					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Baker, Edgar & Co.	37					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Balderson, H., & Son	58					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Baldwin Locomotive Works	13					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Ball Engine Co.	15					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Ball & Wood Co.	15					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Baltimore Engraving Co.	10					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Baltimore & Ohio Railroad Co.	69					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Baltimore Steam Packet Co.	69					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Barber, A. H., Mfg. Co.	28					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Barnes, W. F., & John, Co.	48					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Barnett, G. & H., Co.	76					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Barrett Mfg. Co.	60					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
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Bates, James, Sons	25					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Beach, H. W.	53					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Beardsley Gravity Dam & Con. Co.	70					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Beaumont Iron Works	42					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
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enjamB Iron & Steel Co.	46					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Berryman, James	9					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bertsch & Co.	48					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bealy, C. H., & Co.	76					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bickford Drill & Tool Co.	49					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bird, J. A., & W., & Co.	62					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bird, Wm. M., & Co.	19					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Birmingham Boiler Works	45					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Birmingham Rail & Loc. Co.	45					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Blakeslee Mfg. Co.	30					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Blanton, Jr., E. A.	56					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Blythe, Richard A.	58					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bolles, J. E., Iron & Wire Wks.	58					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bonar, James, & Co.	20					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bonville Portland Cement Co.	8					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Boomer & Boechert Press Co.	38					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bordenkircher, Samuel	35					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bostedo Pneumatic Tube Co.	47					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Boston & Maine Railroad	69					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Boston Belting Co.	33					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Boston Blower Co.	72					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bourne, The	26					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bowler, S. F., & Co.	76					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Bowsher, N. F., Co.	9					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
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Bradstreet Mercantile Agency	69					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
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Brown, A. & F., Co.	31					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Brown Cotton Gin Co., The	67					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Brownell, The, & Co.	18					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
Brubaker, W. L., & Bros.	67					Incandescent Electric Light	75	Murray Iron Works	17	Sprague Electric	63
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We have a number of Dynamos and Motors, which we have displaced with larger units. These are all overhauled and guaranteed to be in good working order before shipping. The prices are very moderate indeed.  
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## Second-hand Corliss Engines,

100, 150, 200, 350, 500 and 800 H. P. Boilers, all sizes. Steam Pumps in great variety. Send for bargain list of second-hand machinery.

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FOR SALE.—One Hor. Tub. Boiler, 5"x16", front and all fittings, good for 100 lbs., \$100; 8"x20" Vertical Self-contained Engine, \$150; 9"x20" Hor. Slide Valve, \$100; 4-horse Baxter Engine and Boiler, \$20; 15-horse Vertical Boiler with 12-horse engine, portable, \$175. J. F. DENIHAN, 450 Hamilton Ave., Brooklyn, N. Y.

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- 12 and 20" triple-gear pit, A1.  
96x14 Wilmarth, triple-gear.  
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27x12 Draper, C. R. & P. C. F.  
27x8 ditto.  
26x12 Wright, C. R. & chuck.  
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No. 15 Garvin plain miller, B. G.  
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No. 2 Brown & Sharpe plain, 48" table feed.  
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28" South Bend drill, B. G. & P. F., fine.  
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Nos. 0, 1 & 2 P. & W. screw machs., wire feed.  
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Ideal twist drill grinder.  
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1 16½"x32"x16" Fitchburg Cross Compound.  
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1 17"x30" Williams Automatic Engines.  
1 16"x24" Beck Automatic Engine.  
2 15½"x15" Armstrong & Sims Engines.  
1 15"x30" Buckeye Automatic Engine.  
1 14"x15" Ideal Engine.  
1 12"x12" Armstrong & Sims Engine.  
1 10"x18"x12" Ball Tandem Compound Engine.  
14 Water Tube Boilers, 165 to 200 lbs. steam pres.  
22 Horizontal Tubular Boilers.  
Several full Railway Equipments.  
Large stock of Machine Tools. Let me know your wants.

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2 Band Saw Mills, 1 Brick Plant, 1 Endless Rope Mine Haulage Plant, 4 0-ton Shay Geared Locomotives, 18 standard gauge Flat Cars, Boilers, Engines, Rail and Equipment.  
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- 1 20" and 36"x48" Tandem Hamilton Corliss, wheel 22"x56" face.  
1 36x72 Wheelock.  
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316 in. and 27 in. x16 in. Westinghouse compound.  
2 13"x12" Erie Ball.  
2 13"x12" Ball automatic.  
2 13 in. x14 in. Watertown automatic.  
1 14 in. x13 in. Armstrong & Sims automatic.  
1 15½ in. x16 in. New York safety automatic.  
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110, 220, 500-volt motors, from 1 H. P. to 200 H. P.

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- 3 13x5 Blaisdell lathes, elevating rest.  
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1 14x6 Ames lathe, elevating rest.  
3 14x6 Flather lathes, plain rest.  
1 14x8 Putnam lathe.  
1 15x6 Prentice lathe, compound rest.  
6 15x6 Blaisdell lathes, elevating rest.  
1 20x8 Putnam lathe, compound rest.  
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1 30x30x10 Putnam planer.  
1 36x36x10 Wilson planer, two heads.  
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1 15" Smith & Mills shaper.  
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1 25" Barnes back-gear, power-feed drill.  
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1 No. 12 Brown & Sharpe miller.  
4 No. 3½ Garvin plain, back-gear millers.  
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1 five-foot Niles vertical boring mill, 1 head.  
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If you are in the market for a second-hand Boiler and Engine, Steam Pump, Feed-Water Heater, Steam Trap, Dynamos, second-hand Belting, Pulleys, Hangers and Shafting, second-hand Steam Pipe, any size or quantity; Wrought Iron Tanks, Smoke Stacks of any kind, kindly communicate with us, as we are in a position to fit you out, and will guarantee perfect satisfaction or refund the money and bear all expenses

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(New.)

No. B-144—24"x6", 24 1/2"x49" tubes.

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(Second-hand.)

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### AIR COMPRESSORS.

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- No. B-501—5"x5". No. B-504—9 1/2"x9 1/2"x10". No. B-505—9 1/2"x15"x12". No. B-507—water air compressors (3). No. B-508—water air compressors (2). No. B-509—water air compressors (C). No. B-510—2 1/2"x6 1/2" (double). No. B-500—8"x16"x12". No. B-503—6 1/2"x8 1/2"x6". All in good order.

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## Engines & Boilers

FOR SALE.

One practically new 20x60 Harris-Corliss, \$1500.  
One 13x12 Erie-Ball Engine, \$500.  
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One 23"x48" Greene Engine, \$2500.  
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One 26"x48" and one 18"x48" four-valve Engines, \$500 and \$600.  
One 24x38 Wright Engine, \$400.  
Two 150 H. P. Manning Vertical Boilers, 125 lbs., \$500 each.  
One 125 H. P. Horizontal Tubular Boiler, \$300.  
Shafting, Piping, etc.

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## Two First-Class Engines

Fifty (50) Horse Power each. Both in good condition. Manufactured by Talbot & Sons. Each engine on continuous test has shown over seventy-five h. p. For particulars, address

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### SPECIAL GAS ENGINE BARGAINS.

50 H. P. Foos, 38 H. P. White & Middleton, 25 H. P. New Era, 25 H. P. Fairbanks-Morse, 15 H. P. Otto, 12 H. P. Otto, 10 H. P. New Era, 3-12 H. P. Fairbanks-Morse, 15 H. P. Chicago, 12 H. P. Chicago, 2-7 H. P. Chicago, 2-7 H. P. Chicago, 2-6 H. P. Fairbanks-Morse, 2-2 1/2 H. P. Fairbanks-Morse. Engines, all sizes, bought, sold and exchanged. Address

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One second-hand "BERRYMAN" HEATER AND PURIFIER, in perfect condition and guaranteed good as new. Will sell cheap for cash. Address

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We are easily the representative machinery house of America. Our stock is the most extensive to be found anywhere.

All rebuilt motive power that leaves our establishment is in absolutely perfect condition. Our extensive repair shops are replete with every modern facility for correctly turning out second-hand machinery, as good as new for further use.

## The Following Items are Offered Subject to Prior Sale:

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- 104. 2 16x24 slide valve.
- 109. 2 8x12 side crank.
- 111. 8x16 right hand, side crank.
- 112. 8x16 left hand, side crank.
- 114. 10x14 link motion, right hand.
- 115. Vertical incased, 10x14, low pressure.
- 116. Cross compound 3x8x8.
- 117. 6½x12 right hand, side crank.
- 118. 9x14 left hand, box bed.
- 119. 8½x12 center crank.
- 120. 9x10 side crank.
- 121. 8x12 center crank, box bed.
- 122. 6½x12 left hand, side crank.
- 123. 5x10 right hand, side crank.
- 001. 6x8x12 center crank, reversible "Tift."
- 002. 7x9x12 center crank, reversible "Tift."
- 143. Davy safety engine and boiler, compound, 8x8.
- 003. 12x20x12 Westinghouse.
- 150. 6x7 Erie City, center crank.
- 151. 6x8 Erie City, center crank.
- 152. 6x7 center crank.
- 153. 6x8 center crank.
- 154. 7x10 side crank.
- 155. 12x24 center crank, heavy bed.
- 156. 7x12 left hand, slide valve.
- 157. 9x12 left hand, slide valve.
- 162. 12x16 left hand and slide valve, extra heavy bed.
- 163. Armington & Sims cross compound 13¼x20½x15.
- 170. 12 H. P. Kimble automatic.
- 171. 5 H. P. low pressure.
- 172. 20 H. P. Triple Expansion "Triumph," nickel plated.
- 173. 13¼x34 Putnam-Corliss.
- 190. 15 H. P. Kimble automatic.
- 192. New York Safety 11x12.
- 206. 14x24 box bed, slide valve, side crank, right hand.
- 207. 8x18 right hand, side crank.
- 208. 12x24 right hand, side crank.
- 210. 11x10 Westinghouse.
- 212. 11x24 left hand, slide valve.
- 213. 12x24 slide valve, right hand.
- 214. 8x7 Westinghouse "Junior."
- 216. 12x16 box bed, right hand.
- 217. 15x16 Ball automatic, center crank.
- 219. 11x20x14 McEwen tandem compound.
- 047. 22x60 Corliss.
- 062. 11x20x20 Rice automatic.
- 060. 13x34 Putnam Corliss.
- 075. 20x30 Poppet valve.
- 076. 18x28 Nicol-Burr.
- 0247. 8x10 Taylor-Breck automatic.
- 058. 1 pair 18½x24 Williams connected.
- 0313. 18x32 Nordburg.
- 0314. 14x18 Erie City side crank.
- 0318. 13x34 Fitchburg Corliss.
- 059. 25 brand new Climax aut., from 5 to 25 H. P.
- 0192. New York Safety, 14x12.
- 0193. 12x12 Armington & Sims.

### No. BOILERS.

- 0906. 75 H. P. Heine safety boiler.
- 064. 48x12 tubular, no dome.
- 460. 4 54x15, no dome.
- 004. 175 H. P. Heine water tube.
- 005. 120 H. P. Sterling water tube.
- 006. 54x14, tubular.
- 675. 48x12 tubular, no dome.
- 676. 60x12 vertical fire box.
- 681. 65x12 vertical fire box.
- 686. 65x16 tubular.
- 688. 65x18 tubular.
- 695. 48x10 vertical fire box.
- 702. 48x10 vertical fire box.
- 704. 60x16, no dome, tubular.
- 708. 66x14 tubular.
- 711. Marine fire box, 15 H. P.
- 716. 4 72x20 tubular, no dome.
- 719. 100 H. P. internally fired.
- 580. 15 H. P. water-tube marine boiler.
- 580. 20 H. P. water-tube marine boiler.
- 007. 1 80 H. P. locomotive fire-box boiler.
- 008. 1 100 H. P. locomotive fire-box boiler.
- 009. 50 vertical, from 2 to 20 H. P.
- 010. 20 locomotive fire-box boilers, from 10 to 40 H. P.

### No. PUMPS.

- 011. Worthington compound duplex, 10x16 by 10¼x10.
- 012. Worthington compound duplex, 8 and 14x8½x10.

- 065. 7 deep-well pumps.
- 100 pumps, single, duplex and triplex, belt driven and centrifugal.

Write for our list of pumps; it's a very complete one.

### No. GASOLINE ENGINES.

- 013. 2 50 H. P. Ottos.
- 10 1½ horse-power.
- 12 2 horse-power.
- 5 3 horse-power.
- 6 4 horse-power.
- 4 5 horse-power.
- 1 8 horse-power.
- 1 10 horse-power.
- 1 20 horse-power.
- 2 25 horse-power.
- 051. From 3 to 20 H. P. brand new Dayton horizontal.

### No. AIR COMPRESSORS.

- 064. 25 assorted size air compressors.

### OUR COMPLETE LIST ON APPLICATION.

### No. HEATERS.

- 014. Baragwanath 76 H. P., brass tubes.
- 015. Smith-Valle No. 1.
- 607. 16 inch diameter, 10 feet high.
- 608. Excelsior 20 inch diameter, 7 feet high.
- 609. Pressure heater 18 inch by 10 feet.
- 610. Pressure heater 14x30 inches high.
- 613. Pressure heater 20x3.
- 615. Pressure heater 12 inch diameter, 4½ feet high.
- 621. Excelsior heater 48 inch high by 18 inch diameter.
- 522. 24x12 brass tubes, 400 H. P.
- 561. 18x4½.
- 562. Baragwanath 14 inch x 4½ feet.
- 564. National, copper flues, 300 H. P.
- 568. 15x4½.
- 695. Excelsior heater 21x4½ ft.
- 571. Baragwanath 75 H. P.
- 575. 16 inch diameter, 6 feet high, automatic regulator.
- 577. Stilwell-Bierce & Smith-Valle 45 inch by 9 feet.

### No. TANKS.

- 614. 30 inch diameter x 12 inch.
- 490. 30 inch diameter x 42 inch.
- 508. 30 inch diameter x 5 feet.
- 509. 30 inch diameter x 54 inch.
- 510. 48 inch diameter x 7½ feet.
- 491. 42 inch diameter x 12 feet.
- 494. 42 inch diameter x 5 feet.
- 495. 48 inch diameter x 7½ feet.
- 496. 48 inch diameter x 8 feet.
- 500. 36 inch diameter x 5 feet.
- 287. 36 inch diameter, 10 feet long.
- 591. Square tank 36x21x18.

This list represents about one-tenth the number of tanks we have in stock. Write us your wants.

### No. HOISTS.

- 016. Standard-gauge locomotive traveling crane, with boiler, self-propelling, 10-ton capacity.
- 017. Locomotive traveling crane, 5-ton capacity.
- 018. Double cylinder 8x14, 3 drum.
- 019. 10x16 double cylinder double drum Mundy.
- 020. 11x18 double cylinder double drum, Mundy hoist.
- 021. 2 locomotive fire box, with single drum, single cylinder, hoist attached.
- 022. Marion steam shovel complete.
- 023. Single hoisting engine and boiler, Mundy, on wheels, single drum, single cylinder.
- 024. 2 stationary hoisting engines, single cylinder, single drum.
- 025. Electric hoist, direct-connected.
- 026. 20 brand new hoists of various sizes.
- 027. Double cylinder, single drum electric hoist.
- 0106. 8½x12 Webster, Camp & Lane hoists.

### No. MISCELLANEOUS.

- 165. One 8-inch shaft.
- 028. 20 feet of 5 3-16 inch.
- 029. 50 feet of 4 1-10 inch.
- 030. 2000 feet of 1½-inch wire cable.
- 031. 500 feet of 2¼-inch cable.

- 032. 1000 feet of 2¼-inch cable.
- 033. 1000 feet of 1½-inch galvanized guy rope.
- 594. Flywheel, solid rim, 10 inch. diameter, 10 inch bore, rim 9 inch face.
- 034. 2 "A" shaped house derricks.
- 505. 1 round iron kettle 48 inch diameter.
- 506. 1 steam-jacket kettle 34 inch diameter.
- 507. 1 steam-jacket kettle 54 inch diameter, 5 feet deep.
- 512. 1 jacket kettle 54 inch diameter, 4 feet deep.
- 513. 1 round jacket 58 inch diameter, 48 inch deep.
- 035. 2 chemical fire engines.
- 036. 2 Lindgreen chemical fire engines.
- 037. 300 gate, globe and angle valves, from 10 to 24 inches, screwed and flanged. Write us.
- 2 mechanical firing fronts for 75 H. P. Heine boilers.
- 048. Rogers 30-ton locomotive.
- 049. No. 3 Gates crusher.
- 050. 44 inch x 6 feet 6 inch rattler.
- 052. 100 steam traps from 4 to 12 inch diameter.
- 053. Pratt & Whitney double-spindle drill press.
- 054. Automatic horizontal boring bar.
- 055. 2 iron planers, 1 18x18x4 and 1 20x20x6.
- 056. 2 Raymond crushers and pulverizers.
- 057. 2 Jones water-wheels, one 24 inches and one 30 inches.
- 070. 2 wire stretchers.
- 061. 2 Wells lights, large size.
- 0321. Hotchkiss hammer.
- 0339. Set of boiler rolls; will take sheets 38 inches wide.
- 063. 16 Ingersoll-Sergeant rock drills.
- 500,000 feet of standard black wrought-iron pipe, from ½ to 12 inch diameter.
- 5 carloads of steel sheets, from 8 to 16 gauge.

All kinds of plumbing material, including bathtubs, lavatories, sinks and closets.

We carry a complete stock of hardware, enclosing such items as horseshoes, horseshoe nails, hammers, hatchets, axes, handles, etc.; also just received 5 carloads of wire nails.

### BRAND NEW RUBBER BELTING.

- 450 feet 18 inch 5 ply.
- 100 feet 20 inch 5 ply.
- 250 feet 22 inch 5 ply.
- 100 feet 24 inch 5 ply.
- 52 feet 34 inch 5 ply.
- 135 feet 20 inch 6 ply.
- 30 feet 24 inch 6 ply.
- 37 feet 16 inch 7 ply.
- 30 feet 20 inch 7 ply.
- 90 feet 24 inch 9 ply.
- 118 feet 14 inch 9 ply.

### SECOND-HAND LEATHER BELTING, DOUBLE THICK.

- 200 feet 16 inch.
- 100 feet 18 inch.
- 200 feet 19 inch.
- 100 feet 20 inch.
- 100 feet 22 inch.
- 100 feet 24 inch.
- 100 feet 28 inch.

Also in stock all kinds of New Leather Belting, Oak Tanned Short Lap. Single and Double, in all widths.

We handle every conceivable kind of a belt, and guarantee to save you money on anything in the line.

### No. ELECTRICAL.

- 038. 50 light 2000 C. P. Westinghouse arc dynamo.
- 039. 45 light Schuyler arc dynamo.
- 040. 30 light Schuyler arc dynamo.
- 041. Two 50 K. W. compound wound Westinghouse alternators.
- 042. 50 K. W. single phase Westinghouse alternator.
- 043. 20 light brush arc machine.
- 044. 25 H. P. 500 volt railroad motor.
- 045. 60 K. W. Ft. Wayne alternator.

Also in stock all kinds of weatherproof and rubber-covered wire, telephone supplies, telephones, fan motors, annunciators, arc globes and electrical supplies in general.

### OUR COMPLETE LIST ON APPLICATION.

OUR CATALOGUE No. 239 contains an itemized and complete list of our stock on hand. It is such a book as every up-to-date merchant and mechanic should have in his possession. It is free for the asking.

Five Long Distance Telephones in our Office, all "Yards 827." Telegraphic information by "Western Union" or "Postal" Code.

## Chicago House Wrecking Co.

W. 35th and Iron Streets, CHICAGO.



**FOR SALE.**  
We own about 2000 tons of  
**60-lb. STEEL RELAYING RAILS**  
and Angle Splice Bars for same. Will  
sell in lots to suit buyer, and subject to  
Hunt & Co.'s inspection. Well located  
for Southern delivery.  
We also handle new or second-hand  
light-weight Rails.

**ROBINSON & ORR,**  
419 Wood Street, Pittsburgh, Pa.

**ATTENTION!**  
**To Eclipse Machine & Boiler Works**  
1132-1138 W. 14th Street,  
CHICAGO, ILLS.

**ICE MACHINES.**  
One 75-ton, Vilter.  
Two 15-ton machines.  
One 10-ton machine.

**BOILERS.**  
Vertical, Tubular and Fire-box, all sizes.

**ENGINES.**  
One 10x15 Buckeye, automatic.  
One 8x16 Buckeye, automatic.  
One 11x15 Bay State, slide valve.  
Two 10x16, slide valve.  
One 8x12, slide valve.

**PUMPS.**  
One 10x7x10 Smith-Valle.  
One 4x3x3 1/2 Duplex.  
One 4x3x3 1/2 Dean Duplex.  
One No. 5 Knowles.

**WOODWORKING MACHINERY.**  
One 24" Buas Machine Works Planer.  
One 30" 3-roll Perry Sander.  
One Door Relisher and Wedge Cutter.  
One 24" Surfacers, incline bed.  
One Double Spindle Shaper.  
Write for prices before purchasing elsewhere.

**MENGEL'S MACHINERY EXCHANGE,**  
26 East Balderston Street.  
**FOR SALE CHEAP—All sizes STEAM AND  
GAS ENGINES—50-H. P. LOCOMOTIVE, 60-  
H. P. HORIZONTAL, 100, 40, 25, 15, 9 AND  
4-H. P. VERTICAL BOILERS, 22x30 150-H.  
P. FARQUHAR PISTON VALVE ENGINE, 5-  
H. P. VERTICAL ENGINE AND BOILER com-  
bined, 20-H. P. HOISTING ENGINE, OTIS 25-  
H. P. STEAM ELEVATOR ENGINE, POWER  
WORM-GEARED FACTORY ELEVATOR,  
TWO REVOLUTION AND DRUM CYLINDER  
PRESSES, JOB PRINTING PRESSES, all sizes  
and makes, complete STEREOTYPE OUTFIT,  
42" HOE POWER PAPER CUTTER, Sheridan  
Extra Heavy Toggle Joint SMASHING PRESS,  
Lot of TYPE, IMPOSING STONES, STANDS  
and CASES, large lot of standard makes of  
PRINTING INKS at 1/2 price, WOODWORK-  
ING MACHINERY, SHAFTING, BELTING,  
PULLEYS and HANGERS. Always positive  
bargains at MENGEL'S MACHINERY EX-  
CHANGE, 26 E. Balderston St., near Light.**

### WANTED.

Five to six hundred feet of good  
second-hand 8-inch standard pipe and  
about two hundred feet of good second-  
hand 10-inch standard pipe. It must be  
in good condition.

**JOSEPH HULL, Savannah, Ga.**

### ROLLING MILLS.

We have purchased the entire plant of the Iron  
Gate Rolling Mill in Virginia, and will have for  
sale some first-class second-hand Mill Machinery,  
including Shears, Trains of Rolls, Engines, Boilers,  
etc., etc. If you are in the market for any of this  
equipment, let us know your wants.

**POULTERER & CO.**

410 Bullitt Building, PHILADELPHIA, PA.

**FOR SALE OR EXCHANGE—BOILERS,  
PUMPS, ENGINES, Etc.** 2 80-h.-p. Bab-  
cock & Wilcox water tube Boilers. A large as-  
sortment of tubular and fire-box Boilers, Corliss,  
Slide Valve and Upright Engines, Single and  
Duplex Steam Pumps, Feed Water Heaters, etc.  
Goods constantly listed with us. All goods guar-  
anteed as represented. Send for stock list and  
let us know your wants, and we will supply you.  
**H. MOORE CO., 2d & Sycamore Sts., Milwaukee, Wis.**  
Steam Fitting and Machine Shop.

### FOR SALE.

**Can Ice Making Machinery,**

INSTALLED BY

**YORK MANUFACTURING CO.,**  
(50 Ton Daily Capacity)

complete with 2 Compound Compressors, 30 ton  
each. Distilling Tanks, Receivers, Boilers, all  
Piping, Dynamo and Engine for Electric Light-  
ing and Driving Travelling Cranes for handling  
cans. About 1500 cans, used 2 years, and can be  
bought right, either to be used on premises or  
removed. For full particulars, address,

**S. T. LUND,**  
120 High Street, BOSTON, MASS.

## Second-Hand MACHINERY

For Immediate Delivery.

- 1 36 in.x36 in.x9 ft. Sellers Planer, 1 head.
- 1 36 in.x36 in.x7 ft. Sellers Planer, 1 head.
- 1 30 in.x30 in.x10 ft. P. & W. Planer.
- 1 32 in.x32 in.x10 ft. P. & W. Planer.
- 1 3 Spindle Jones & Lamson Drill Press.
- 1 6 Spindle Nut Tapper, 1/2 in.
- 1 10 in. New Haven Shaper.
- 1 Bement Traverse Shaper, 60 in. table, 14 in. Stroke.
- 1 Bement Traverse Shaper, 72 in. table, 12 in. Stroke.
- 1 No. 1 Brainard Universal Milling Machine.
- 1 No. 4 Lodge & Davis Universal Milling Machine.
- 1 Portable Air Compressor, motor driven.
- 1 No. 7 Long & Allstatter Punch.
- 1 20 in.x21 ft. Johnson Engine Lathe.
- 1 46 in.x24 ft. Engine Lathe.
- 1 48 in.x24 ft. Engine Lathe, triple geared
- 1 14 in.x6 ft. Blaisdell Engine Lathe.
- 1 16 in.x8 ft. Blaisdell Engine Lathe.
- 1 24 in. Gisholt Turret Lathe.
- 1 28 in. Gisholt Turret Lathe. (New.)
- 1 60 in. Heavy Radial Drill, 5 in. spindle.
- 1 42 in. Betts Radial Drill.
- 1 3 in. National Bolt Cutter.

**U. Baird Machinery Co.**

123-125 Water Street,  
PITTSBURG, PA.

## FOR SALE. A COMPLETE LAUNDRY OUTFIT

(PRACTICALLY NEW)

CONSISTING OF MACHINERY MADE BY  
THE COLUMBIA CO.

Suitable for a town of twenty  
thousand inhabitants.

We are offering a bargain. Send for list.

**R. S. ARMSTRONG & BRO.**  
ATLANTA, GA.

### Woodworking Machinery.

One 32" Wood Turning Lathe. One 32"  
22' Wood Lathe. One Smith Tennoning  
Machine. One McNish & Butler Tennon-  
ing Machine. One three-sided 8" Mould-  
ing Machine. Three 8" Outside Moulding  
Machines. One Fay Single Stem Shaper.  
One Walker two-sided Panel Raiser. One  
24" Single Surfacers, Planer and Matcher.  
One Foot-power Miterer. Two Jig Saws.  
One 6' Hand Saw. One Saw Table, takes  
18" saw. One Single Saw Arbor, 17" long.

**CARLIN MACHINERY & SUPPLY CO.,**

Lacock and Sandusky Sts., Allegheny, Pa.

### PARTIAL LIST OF SECOND-HAND MACHINERY.

- 2 120-h. p. 60"x18" Tubular Boilers.
- 1 80-h. p. 60"x18" "
- 1 60-h. p. 54"x14" "
- 1 100-h. p. 13x12 Ball Automatic Engine.
- 2 16x12x10 Worthington Duplex Pumps.
- 2 24 Exhaust Fans.
- 1 60-h. p. 10x12 N. Y. Safety Power Automatic Engine.
- 1 80-h. p. 12x20 Baker Automatic Engine.
- 1 12x10x18 Smith-Valle Single Pump.
- 1 15-h. p. Centrifugal Wrecking Pump with Direct Connected Engine.
- Also a large number of Smaller Engines, Boilers, Pumps, Heaters, etc.

**RAINIER & WILLIAMS,**

63 S. Canal St., CHICAGO, ILL.

## Engine Bargains

- 100 h. p. 12x24 Buckeye Automatic.
- 100 h. p. 12x20 Rice Automatic.
- 150 h. p. 16x42 Fraser & Chalmers Corliss.
- 150 h. p. 14x30 Cummer 4 valve Automatic.
- 250 h. p. 12x22x18 Payne Tandem Cpd. Auto.
- 60 h. p. 12x24 Cooper Slide Valve.
- 50 h. p. 12x18 Slide Valve.
- 14x7x10 Smith-Valle Fire Pump.
- 200 h. p. Baragwanath Heater.
- 45 h. p. 11x18 Slide Valve.
- 60x16 ft. Tubular Boiler.
- 200 h. p. Stillwell-Bierce Heater.

The above are all in first-class condition and ready for shipment.

**A. L. DAWSON & CO.,**

27-31 W. Washington St., CHICAGO, ILL.

## Second-Hand Machinery

For Immediate Delivery  
at Bargain Prices.

- 1 T. H. 110 volt Generator, 50 K. W., perfect order, \$450.00.
- 1 T. H. 110 volt Generator, 30 K. W., perfect order, \$270.00.
- 1 Buffalo Steam Pump Co.'s Compound Duplex Pump, size 12 and 18 1/2 by 10 1/2 by 12, perfect order, \$600.00.
- Corliss Automatic Slide Valve Engines, Boilers, Pumps, Heaters, Iron and Woodworking Tools.

**WISCONSIN MACHINERY CO.**

125-127 W. Water Street, Milwaukee, Wis.

## Contractors' Outfit

FOR SALE.

- 1 1000-ft., 1 1/2-in. Sherman Cableway, with Lambert engine, complete.
- Stiff Leg, Guy and Breast Derricks, hand and steam power.
- Traveling Derrick, Byer's.
- Concrete Mixer, power.
- Horizontal Boiler, 40 H. P.
- "New Ingersoll" Drills E 9, new and second-hand.
- Pile Driver, Bucyrus Dredge.
- Austin "New Era" Graders and Dump Wagons, slightly used.
- Wheel and Drag Scrapers, used less than one month.
- Horse and Mule Harness.
- Pipe Fitting and Machine Shop Outfit.
- Plows, Shovels, Small Tools, etc.

Machinery located at Trenton Falls, N. Y.;  
Rome, N. Y., and Wyoming, Ill.

For particulars, enquire of

**The Warren-Burnham Co.,**

81 Fulton St., New York City.

### For Sale at a Bargain.

**LOCOMOTIVES**—3 standard gauge locomotives with tenders; 2 with 16x24 cylinders; 1 with 18x24 cylinder. 1 42" gauge H. K. Porter saddle tank locomotive, cylinder 9x14".  
**STEAM SHOVELS**—1 Marion, style "A," with 1 1/2 yd. dipper. 1 Osgood with 3/4 yd. dipper.  
**ENGINES**—1 20x40x36 Wright Corliss tandem compound engine. 1 18x24x42 Fitchburg tandem compound engine. Also several others of different styles and horse power.  
**PUMP**—1 Worthington compound duplex steam pump, No. 20,689; size 12x18 1/2x10 1/2x10.  
**HOISTERS**—1 pair of 14x24 link motion mine hoisting engines. Also several others.  
The above can all be seen at our yards in Newark, N. J. Correspondence solicited.

**GRANT & WILLIAMS,**

Park Row Building, NEW YORK.

### New and Second-Hand

### Iron Tools and Woodworking Machinery

Corliss and Double Valve Engines for Trolley Roads and Electric Lighting Stations.

**H. C. BAKER & CO.,**

114 N. 3d Street, Philadelphia, Pa.

### FOR SALE.

### A COMPLETE CAMPBELL CYPRESS OUTFIT,

With Engines, Boiler, Pump, Warehouse  
Trucks, Etc.

**R. S. ARMSTRONG & BRO., Atlanta, Ga.**

## FEED-WATER HEATERS

2nd-Hand 80, 160 and 250 h. p. Berry-  
mans, 200 h. p. Goubert, 150 and 600 h. p.  
Wainwrights, 500 h. p. National, 600 h. p.  
Stillwell-Bierce Open Heater. All guar-  
anteed. **F. L. PATTERSON, Havemeyer Bld'g, N. Y.**

## FOR SALE.

We carry a large line of Engines, both new  
and second-hand, in stock—cross-compound  
Corliss, tandem-compound Corliss and simple  
Corliss from 1500 H. P. down to 75 H. P.

Automatic Engines, every size and make—  
slide and piston-valve Engines from 1000 H.  
P. down to 5 H. P.

**BOILERS**—Water tube, horizontal tubu-  
lar, locomotive Boilers, etc.

**HEATERS**—Open and closed heaters, all  
sizes and makes.

**MACHINE TOOLS**—Lathes, planers, shap-  
ers, drill presses, chucks, emery wheels,  
power punches, etc.

**BLOWERS**, Exhaust fans, shafting, pul-  
leys, hangers, valves, governors, belting and  
pipe.

**PUMPS**—All sizes and makes from 3,000,000  
gallons down.

**CONDENSERS**—Deane, Nordberg, etc.

### ELECTRICAL MACHINERY.

- 1 600-light Edison incandescent dynamo.
- 2 400-light Edison incandescent dynamos.
- 1 60-light Thomson-Houston incandescent dynamo.
- 1 65-light Brush arc.
- 1 60-light Wood arc.
- 1 50-light Thomson-Houston incandescent dynamo.
- 1 30-light Brush dynamo.

### ROLLING-MILL MACHINERY.

One 18" muck mill, one 18" sheet-bar mill,  
one squeezer, iron and wooden jib cranes,  
traveling cranes, rotary shears, hydraulic  
pumps, floor-plate, bugles, etc.

### STEAM HAMMERS.

4000, 1200, 700 and 400 pounds double-legged  
Morgan.  
275 pounds single-legged Kline.

### ICE AND REFRIGERATING PLANT.

One pair of Pictet horizontal Ice Machines,  
consisting of two Corliss Engines, 18"x36",  
and ammonia Compressor, 10"x36" (ammonia  
end being new and manufactured by the  
Vilter Manufacturing Co., Milwaukee, Wis.);  
capacity of each machine 25 tons ice or 50  
tons refrigerating.

The above is a very fine machine, thor-  
oughly overhauled, and has just been sold to  
us by a Pittsburg firm, who replaced it with  
a machine of much larger capacity. Price  
\$4500 f. o. b. Pittsburg.

### PUMPS—FOR WATER-WORKS.

One Worthington Duplex 25x20x25, rods  
3/4" diameter, displaces 32,000 gallons per  
stroke, 110 strokes per minute. Total ca-  
pacity over 5,000,000 gallons in twenty-four  
hours. Weight about 40,000 pounds.

This pump is as good as new and has been  
taken out of our city water-works, being re-  
placed by one of much larger capacity.

One Gaskill Compound Pump, 16" L. P. cy-  
linder, 22" H. P. cylinder, 18" stroke, 10 1/2"  
fluid cylinder, suction 14", discharge 12", 135  
pounds pressure. Used but five months.

Two Gordon Compound Pumps, non-con-  
densing duplex, inside plunger, H. P. steam  
cylinder 12" diameter, L. P. cylinder 20" di-  
ameter, 11" water, stroke 18". Capacity of  
each engine 1,250,000 gallons per twenty-four  
hours, the suction being equal to not more  
than 20" vertically, and forcing into a reser-  
voir stand-pipe or mains against a pressure  
of 110 pounds, at a piston speed not to exceed  
100 feet per minute, with a steam pressure  
of 90 pounds.

Accompanying these engines are all the  
necessary attachments to connect to the suc-  
tion and discharge pipe inside the pump-  
house; also the following: One vacuum  
gauge, one steam gauge, one combination  
water-pressure gauge, one eight-day clock.  
All the above mounted on black walnut  
board. All the necessary valves on suction  
and discharge and steam pipe.

Engines have copper air chambers, and are  
lagged with black walnut lagging.  
The above is a new outfit never erected and  
cost \$9000. We will sell same very low.

- 1 18"x12"x20" Cameron single Pump.
- 1 20"x6"x24" Wilson & Snyder duplex.
- 1 18 1/2"x10 1/2"x10" Worthington compound.

And 100 smaller sizes, duplex and single.

### SPECIAL PUMP.

One Slaby Fire Engine, 1000 gallons per  
minute, nearly new. Will be sold cheap. Can  
supply photograph.

Send for our April stock-list, which gives  
full particulars of what we have. We can-  
not advertise one-hundredth part of it.

**MACHINERY BOUGHT AND SOLD.**

## WICKES BROS.

45th St. and A. V. R. R.

PITTSBURG, PA.

Main Offices and Works, SAGINAW, MICH.

Branch Offices,

96 Liberty St., NEW YORK.  
1214 Marquette Bldg., CHICAGO.

**FOR QUICK DELIVERY.**

18", 22", 24", 26", 28", 30",  
32" and 36" Lathes. Any length.

**SCHUMACHER & BOYE,**  
Cincinnati, O.

**CONTRACTORS' PLANT****FOR SALE.**

1 Double 6"x12" Double Drum Skeleton Hoister.  
2 Three-Ton Cable Ways.  
1 Ingersoll Compressor, 16-16x24.  
1 Morris Co. Compressor, 9 1/2"-9 1/2"x15.  
1 Ten-Ton Cable Way.  
2 Cockburn Concrete Mixers.  
2 Osgood Dredges.  
Hull 70 x 17 x 6 ft. with 6 x 29 ft.  
pontoon. 1 1/2 Yard Dipper, Steel  
Boom, 45 ft.

**LOCOMOTIVES.**

1 Porter, 11x16 Forney Type, 36" gauge.  
1 Porter, 10x16 Saddle Tank, 4 1/8" gauge.  
1 Vulcan, 10x16 Saddle Tank, 36" gauge (new.)

**J. C. SXTON, 18 Broadway, New York.**

**Fine Bargains for Quick Buyers**

Conant Single Corn Cooker, Corn Silker, Corn Cutter, Pea Separator, two Fisher Process Kettles, Vertical Boilers to 60 H. P., Horizontal Boilers, 27 to 90 H. P.; three Horizontal Tubular Boilers, 125 H. P., fine condition; Horizontal Slide Valve Engines, 25 to 80 H. P.; Vertical Engines, 3 1/2 to 30 H. P., 2 and 4 H. P.; Gas Engines, 2 1/2 H. P.; Gasoline Engine, 8x10; Ball Automatic High Speed Engine, 45 K. W. Edison Dynamo, 550 volts, 6 H. P. Motor, S. A. Woods F.oring Machine, Pony Planers, Swing Cut-off Saws, Tenoners, Jointers, Mortising and Boring Machines, Self Feed Rip Saws, Hub and Axle Machinery, Steam Pumps and Receivers, Blowers and Exhausters, Pulleys, Belting, Shafting, etc.  
New and Second-hand Machinery, all kinds, bought, sold and exchanged.

**J. D. MALLORY,**

22 Light Street, Baltimore, Md.

**John A. Waters & Co.**

13 1/2-17 1/2 S. Eighth Street,  
RICHMOND, VA.

New and Second-Hand Boilers, Engines, Mining Outfits and General Machinery.

One Complete Stem Fertilizer Plant, including 1 Exhaust Fan, fittings and piping; 90' Chain Belt and Sprocket Wheels; Drier and fittings; Conveyor and belting; 22' Conveyor and fittings; Elevator Sprocket Wheels and Chain Belting; Scientific Attrition Mill, No. 14; Exhaust Fan; 42' Piping; Dust Collector and connections; Reel and fittings; Transmitting Rope Sheave; 1 large Breaker; 1 Combination Breaker; 1 Magnetic Separator; 1 Self Feed Ross Cutter, No. 116; Conveyor and Elevator; 1 30" New American Turbine Wheel, all bearing parts new.

**FOR SALE.**

1 Fairbanks Gasoline Engine (30 horse power). This engine is new and complete in every particular, including a 40-gallon galvanized tank, 1 box batteries, fixtures, piping, belting, and an extra 525-gallon galvanized gasoline tank. Will sell at a great bargain. 1 Steam Fire Engine, late from Baltimore department. 4 Hoisting Engines, 12, 15, 18 and 25-horse power respectively. A number of single and duplex Steam Pumps. Cistern, Deck and Deep Well Pumps (new). General machine work and repairing. I make a specialty of repairing Steam Pumps, High-speed and Gasoline Engines.

**W. W. HIRM,**

406 E. Pratt St., Baltimore, Md.

**MACHINERY BARGAINS.**

1 3-sided Planer and Matcher, Frank, \$175. 1 38" Connell & Dengler Circular Re-saw, \$1.25. 1 42" 3-roll Egan Sander, \$400. 1 30" Single Drum Sander, \$45. 2 20" Pony Planers, each, \$65. 1 24" Single Surfer, \$100. 4 Engines. 2 Boilers.  
Write for complete list.

**Cleveland Belting & Machinery Co.**  
CLEVELAND, OHIO.

**FOR SALE.**

Good Second-hand Dynamos and Machinery, large or small sizes, great variety. Boilers, Engines, Gas Engines, Heaters, DYNAMOS, all kinds and sizes. Pipe, Shafting, Pulleys, Belting and General Factory Supplies. Write us for anything you want for full description and prices. We have some great bargains to offer.

**American Electric Supply & Mfg. Co.**

27 Thames Street, NEW YORK CITY.

**BIG BARGAINS.**

General Electric, three phase, sixty cycle, Inductor Motors

1 15-H. P. 110 volt, speed 900, price \$350.00  
1 30-H. P. 110 volt, speed 900, price \$550.00  
1 75-H. P. 550 volt, speed 600, price \$1100.00  
Chicago delivery, ready to ship. Hundreds of other bargains in stock. **GUARANTEE ELECTRIC CO.**  
133 S. Clinton St., CHICAGO.  
Chas. E. Gregory, President.

Root Blowers, Nos. 1, 2, 3 and 6.

Sturtevant Blowers, 30 and 60-inch with Heaters. All complete, nearly new.  
Root Acme No. 3 1/2 Power Blower with T. & L. Pulleys—new.

**A. ASHER,** 123 Liberty St., cor. Greenwich,  
NEW YORK.

**FOR SALE.**

Lot of Boilers, Engines, Lathes, Planers, Drill-Presses, 1 Large Fire Pump, Steam Pipe, all sizes, and about 500 Tanks of different sizes.

**WILLIAM ECKBOLD'S SONS,**  
711 E. Girard Ave. PHILADELPHIA, PA.

**FOR SALE.**

60 lead-lined Storage Battery Tanks for regular type F, 19-plate Chloride Accumulator; all in good condition and for sale at a bargain; also a number of new type F plates.

**ELECTRIC STORAGE SUPPLY CO.**  
185 Franklin St., BOSTON.

**2D-HAND BERRYMAN HEATERS.**

all sizes. Taken in trade for our Improved Berryman. In perfect order. Tested and guaranteed. Prices reasonable. **BENJ. F. KELLEY & SON,** Makers, 91 Liberty St., N. Y.

**FOR SALE.**

Saddle Tank Locomotive, formerly used on Brooklyn Bridge; 4 ft. 8 1/2 in. Gauge, 4 Drivers, Cylinders 12 in. x 16 in., Tank Capacity about 800 Gallons, Weight about 25 tons loaded. Write for cut with details and price.

**BENJAMIN WATSON,**

Coffee Exchange Building, 66-70 Beaver Street,  
NEW YORK CITY.

Steel Rails, Cars, Locomotives, Railroad Supplies

**FOR SALE.****Relaying Rails, Etc.**

100 tons 30-lb. Iron with splices.  
50 tons 30 lb. Steel with splices.  
200 tons 20 lb. Steel with splices.

**FROGS AND SWITCHES.**

**MAY & SPALDING,** Atlanta, Ga.

**FOR SALE—LOCOMOTIVES, 36" Gauge.**

2 10x16 4-wheel Con. with tenders.  
1 9x14 4-wheel Con. with forward truck and tender.

1 6-ton Byers geared. All strictly first-class.

**SCOTT, LOW & CO.**

Empire Building, PITTSBURG, PA.

250 Coal Cars.

500 Flat Cars.

650 Box Cars.

All standard gauge, in good condition, for sale very cheap.

**Walter A. Zelnicker, in St. Louis.**

**FOR SALE.**

One 8-horse power Upright Engine,  
One 9-horse power Upright Boiler.  
One 11-horse power Upright Boiler.

**E. J. CODD CO.,**

700 N. Caroline St., Baltimore, Md.

**FOR SALE.**

Bar Mill, complete with muck and finishing rolls. 12"x16"x18" Cross Compound Boiler Engine, in first-class condition.  
Also Buy and Sell Relaying Rails, Locomotives and Cars.

**JUSTICE COX, Jr. & CO., Limited,**  
552-554 Bullitt Building, Philadelphia, Pa.

**Locomotives, Cars, Rails,**  
**FOR SALE.**

For every gauge, weight and service,  
Write for prices.

**The Males Co.** 15-16-17 CINCINNATI, OHIO.  
Aetna Bldg.

**FOR SALE**

FREIGHT, PASSENGER AND LOGGING

**LOCOMOTIVES**

ALL SIZES CARS QUICK DELIVERIES

**F. M. HICKS,** 225 DEARBORN ST. CHICAGO, ILL.

**B. F. STURTEVANT COMPANY**  
BOSTON, MASS.  
NEW YORK  
PHILADELPHIA  
CHICAGO  
LONDON

**FOR SALE.**

One S. A. Woods' 8-in. No. 25 Matcher, one S. A. Woods' No. 17 Double Surfer, 27-in.; one 15-in. Hoyt No. 27 Planer and Matcher, one S. A. Woods' Double Surfer and Matcher, four sets of Box-Making Machinery, four sets of Window-Frame Machinery, five Large Double Sturtevant Fans, one Power Feed Rip Saw, one Hoyt No. 13 Double 13-in. Surfer.

I have over 150 machines.  
SEND FOR MY LIST.

**G. W. WILLEBRANDS,**  
50 Jefferson Ave.  
DETROIT, MICH.

**Freight Cars for Immediate Delivery.**

We have ready for prompt delivery a large number of BOX, FLAT, GONDOLA (Flat Bottom, Drop Bottom and Hopper Bottom) Freight Cars; 34 ft. long and 30 tons capacity. These cars are in actual service, running over various roads in the United States, enabling us to make prompt delivery (at small freight charges) in almost every section of this country.

Many of them are equipped with M. C. B. Automatic Couplers and Air Brakes applied to wheels by Metallic Brake Beams.

**Low Prices. Easy Terms.**

**NEW YORK EQUIPMENT CO.,**

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## LOGGING CARS, LIVE ROLLS, DRY KILNS, and IRON KILN TRUCKS

# SECOND-HAND LOCOMOTIVES

**UNION IRON WORKS CO., Selma, Ala.**



**Rails and Locomotives for Sale for Cash or Time Payment Plan.**

Two 17-ton 10x14 standard gauge, Forney type. Two 14-ton 9x12 standard gauge, saddle tank. One 27-ton 14x22 standard gauge, 8-wheel. One 8-ton 6x10 standard gauge, saddle tank. One 16-ton Heisler standard gauge, geared. Two three feet gauge geared, Shays. One three feet gauge 8x12 Porter, saddle tank. One three feet gauge 9x14 Porter, saddle tank. One three feet gauge 10x16 Porter, saddle tank.

Also Relaying Rails of all weights from 12 to 60 pounds per yard, for immediate delivery.

**Birmingham Rail & Locomotive Co., Birmingham, Ala.**

**FOR SALE.**

## Lidgerwood Log Snaking Plant.

Complete with engine, drums, boiler, ropes, etc. Outfit is new, never having been used. Address

**W. R. WARE,**

P. O. Box 333.

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**KILBY LOCOMOTIVE & MACHINE WORKS**

Anniston, Ala.

BUILDERS OF

**Logging Cars.**

Prices and specifications furnished upon application.



**Locomotives and Cars**

FOR  
Construction, Logging, Freight  
and Passenger Service.

**SOUTH SIDE ELEVATED R.R.**  
26-ton Short Wheel Base Engines.

**BROOKLYN ELEVATED R.R.**  
30-ton Forney Type Engines.

**NARROW GAUGE EQUIPMENT.**

**FITZ-HUGH & CO.**

1647-48 Monadnock Block, Chicago. 141 Broadway, New York.

Passenger, Baggage and Mail  
Combination . . . . . } **CARS**  
Freight . . . . . }

Write for prices.

**FITZ-HUGH & CO.**

1647-48 Monadnock Block, Chicago. 141 Broadway, New York.

**FOR SALE.****NEW STEEL RAILS**

12, 16 and 20 lbs. to the yard.  
**RELAYING STEEL RAILS**, 25 lbs. to the  
yard, with splices.  
All ready for immediate shipment.

**HYDE BROS. & CO.**

902 Lewis Building,

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**FOR SALE.**

**2000 tons of 56-lb. STEEL RELAY-  
ING RAILS AND ANGLE BARS**, in  
West Virginia, July delivery.

**ISAAC JOSEPH IRON CO.**

525-531 Hunt St., Cincinnati, Ohio.  
Monadnock Block, Chicago, Ill.

**FOR SALE.****RELAYING RAILS.**

**500 tons of 60 lb. Steel,**  
With Angle-Bars.

**500 tons of 45 lb. Steel,**  
With "Fisher" Joints.

**TIDEWATER DELIVERY.**

**New Light Steel Rails.**

**THE STEEL RAIL SUPPLY CO.**

100 Broadway, NEW YORK CITY.

**WANTED.**

The Alabama Consolidated Coal &  
Iron Company, Birmingham, Alabama,  
desires to purchase several DROP-  
BOTTOM DUMP ORE CARS, capa-  
city twenty tons and upwards.

**RAILWAY EQUIPMENT.**

Relay Rails, 35-lb. and 40-lb. section. Locomo-  
tives for every variety of service, overhauled  
and ready for use. Make known your wants  
in locomotives and we can supply you.

**SOUTHERN IRON & EQUIPMENT CO., ATLANTA, GA.**

**Relaying Rails for Sale.**

**Immediate Delivery.**

230 tons 6" Johnson Girder Rails, Section No.  
52, in good condition, at Washington, D. C. Also  
other rails of different weights and descriptions  
at various points.

**BENJAMIN IRON & STEEL CO.**

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**FOR SALE.**

Cast Iron Wood Rim Rope Wheel, 18 feet diame-  
ter; fifteen 2 1/2-in. Rope Grooves; good condition.  
**PARKERSBURG IRON & STEEL CO.**  
PITTSBURG, PA.

**Harry N. Abercrombie, Solicitor,**  
Equitable Building.

**TRUSTEE'S SALE**

**OF**  
**Railroad Supplies, Boilers, Engines, etc.**

**BY PUBLIC AUCTION,**

**On the Premises, Ludlow Street,**  
**near Fort Ave.**

**Tuesday, September 10, 1901, at 10 A. M.**

By virtue and in pursuance of an order of the  
United States District Court for the District of  
Maryland passed in the matter of the estate of F.  
Oscar Reuter, (trading as Charles Reuter, Son &  
Co.), a bankrupt, the undersigned, Trustee in  
Bankruptcy, will sell, as above, ALL THAT DE-  
SIRABLE STOCK OF BOILERS, ENGINES,  
Etc., consisting in part of 1 Vertical Boiler 33x8,  
1 Vertical Boiler 42x6.6, 1 Vertical Boiler 40x9, 1  
Vertical Boiler 36x6, 1 Atlas 20-H. P. Engine, 1  
Vertical Pump, 1 Horizontal Fly-wheel Pump, 1  
15-H. P. Vertical Engine, 1 4-H. P. Vertical En-  
gine, 1 35-H. P. Horizontal Engine, 1 20-H. P.  
Horizontal Engine, 1 10-H. P. Frick Portable  
Engine, 1 6-H. P. Bidsall Portable Engine, 1 6-  
H. P. Baxter Vertical Engine and Boiler, 1 4-H. P.  
Baxter Vertical Engine and Boiler, 1 10-H. P.  
Aultman Traction Engine, 1 40-H. P. Horizontal  
Return Tubular Boiler, 1 P. Stack 20x24, 1 P.  
Stack 23-15, 1 Buffalo Forge, 1 Brass Pump Boiler,  
2 Circular Saws, 1 lot Chain and Carrier, 2 pieces  
3/4 Hose, 1 Grindstone and Frame, 1 40-foot Gandy  
Belt, 1 lot Tackle and Blocks, 1 lot New and  
Second-hand Pipe and Tubes, 1 14x20 Long  
Stack, 1 Pipe Vise, 1 Bench Vise, 1 Anvil, 1 lot  
Tools, 1 lot Ladders, Blocks, Trestles, etc., 1 lot  
Paints, Oils, etc., 2 Steam Gauges, 2 Smoke Boxes,  
1 Wood and 2 Iron Tanks and 1 lot Sundries.

ALSO,

**On Saturday, September 14, 1901, at 10 A. M.**

**AT THE AUCTION ROOMS,**

**16 and 18 N. Charles St., will be sold**  
**the following Desirable**

**OFFICE FURNITURE:**

1 Oak Roll-Top Desk, 1 Oak Filing Cabinet, 1  
Oak Hat Rack, 1 Oak Bookcase, 2 Letter Presses,  
1 Oak Table, 1 Table, 5 Chairs, 1 Revolving  
Chair and 1 Water Cooler and Stand.

TERMS OF SALE, CASH.

**HARRY N. ABERCROMBIE,**

Trustee in Bankruptcy.

**SCHWAB BROS. & CO.,**

Auctioneers.

**FOR SALE.****Locomotives.**

1 Standard Gage 15-ton Shay Geared Locomo-  
tive. 1 6x10-36" Gage Saddle Tank Porter Loco-  
motive. Light Locomotives our specialty.

WRITE US.

**TORBERT & PECKHAM,**

1607 Monadnock Block, Chicago.

**SITUATIONS WANTED.**

Advertisements under this head will be in-  
serted at the rate of one cent a word for each  
insertion.

**WANTED.**—By overseer of weaving, plain or  
fancy. Experienced designer. Address  
**OVERSEER**, care Mfrs. Record.

**ANALYTICAL CHEMIST AND ASSAYER**  
of wide experience in engineering, chemis-  
try and assaying, is open for position. Address  
**ASSAY**, care Mfrs. Record.

**YOUNG**, Capable Business Manager, at present  
engaged as manager for corporation hand-  
ling large financial interests, desires change, is  
open for engagement. Would like to hear from  
party desiring to relinquish active works to  
younger hands. Address **MANAGER**, care Man-  
ufacturers' Record.

**HELP WANTED.**

Advertisements under this head will be in-  
serted at the rate of one cent a word for each  
insertion.

**WANTED.**—A Superintendent for our Rock  
Salt Mines at Weeks Island, La. Must be  
familiar with rock salt business and capable of  
designing a rock salt mill. Write, giving refer-  
ence and state experience. **MYLES SALT CO.,**  
Ltd., New Orleans, La.

**WANTED.**—A Foreman for Sash and Door  
Factory; must be able to read blue prints.  
Also wanted man to run a moulder; must be quick  
and active. Address **Box 4**, Blackstone, Va.

**SALESMEN WANTED** to sell Drying Machi-  
nery for coal, shale, marl, phosphate rock,  
ores, etc. Address **THE TURNER DRIER CO.,**  
Louisville, Ky.

**WE BUY OR SELL**

Relaying Rails of all sections. We have 16 and 25  
pound rails for prompt shipment. Dealers in  
Machinery of all kinds, Boilers, Pipe, etc., and  
buy Scrap Iron, Brass, Copper, etc. Correspon-  
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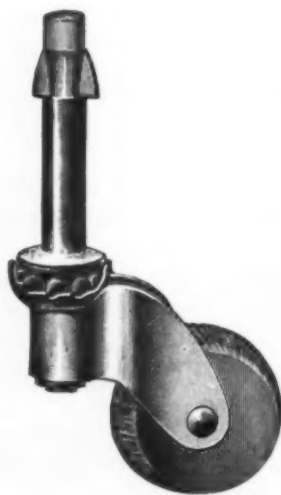
**J. B. JONES & CO.**

310 to 320 Morgan St. ALLEGHENY, PA.

It would pay every town and every  
property-owner and agent in the South to  
advertise in the *Southern Farm Maga-  
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turers' Record Publishing Co., Baltimore.

# Something New.

**Standard  
Ball-Bearing  
Philadelphia or  
Drive Casters.**



**Its Merits We  
Know.  
Its Success We  
Will Prove.**

**Simplicity, Durability and Cheapness.**

Write for Samples and Illustrated  
Catalogue, Free.

**Standard Caster & Wheel Co.**

318-326 East 23d Street, New York.

# American Iron and Steel Mfg. Co.

General Offices at Lebanon, Pa., U. S. A.

MANUFACTURERS OF

## MERCHANT BAR IRON

(Annual Capacity **AND STEEL** about 150,000 Tons)

Also Every Variety of

**Machine Bolts, Nuts, Washers, Turnbuckles, Lag Screws,**

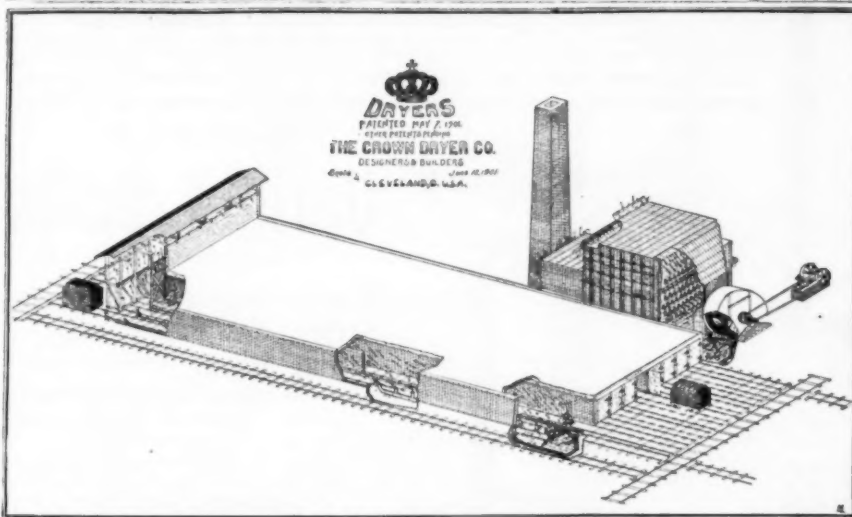
**Railway and Dock Spikes, Harvey Grip and Other Railway Track Bolts.**

**Boiler, Ship and Structural Rivets,**

**CAR FORGINGS and RODS AND IRONS FOR BRIDGES, BUILDINGS, ETC., ETC.**

This Company owns and operates the works formerly owned by

J. H. STERNBERGH & SON, Reading, Pa. NATIONAL BOLT, NUT AND RIVET WORKS, Reading, Pa. LEBANON IRON CO., Lebanon, Pa. EAST LEBANON IRON CO., Lebanon, Pa. PENNSYLVANIA BOLT AND NUT CO., Lebanon, Pa.



This is an illustration of the "CROWN" System of drying brick.

**The Crown Dryer Co.,**

New England Bld'g, Cleveland, O.

## CARBORUNDUM

Long-lived grinding wheels are money-saving wheels.

A Carborundum Wheel will do two to four times the work of any other abrasive wheel, before becoming useless.

And at the same time it will do its work faster and better.

Carborundum is guaranteed to save money to its users.

Write for the booklet. The Carborundum Co. Niagara Falls, N. Y.



## Paddle Wheel Machinery

Our knowledge of river navigation is earned through long experience and exceptional opportunity. We design and build the entire and complete outfits of driving machinery for powerful light draft vessels, having the best of modern shop facilities to aid us in doing all the work. Write to us before you act.

## MARINE IRON WORKS

Station A. CHICAGO.

Engine Lathes, 16 in. to 24 in. Swing.



Strictly High-Grade Lathes, with all modern improvements. Great solidity and convenience and ease of operation.

**GREAVES, KLUSMAN & CO.**

Cincinnati, O., U. S. A.

If you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send the Manufacturers' Record a postal card giving the character of the machinery needed.

## HYDRAULIC JACKS.

All Sizes and Styles. Constantly in Stock.

THINK TWICE AND TRY OUR JACK ONCE. WARRANTED TO WORK SATISFACTORILY.

ALSO MANUFACTURERS OF

Presses, Pumps, Accumulators, Valves, Gauges and Fittings.

Send for Catalogue H H.

**WATSON-STILLMAN CO.** 204 to 210 East 43d Street, NEW YORK.



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Used Twenty-Five Years and Proven to be of Superior Quality.

All our goods bear the Bear and Bull Trade-Mark.

**BAEDER, ADAMSON & CO.,**

730 Market St., Philadelphia.  
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143 Milk Street, Boston.  
182 Lake Street, Chicago.

**W. L. BRUBAKER & BROS.,** Millersburg, Pa.

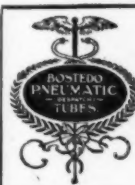
Manufacturers Of...

**Screw Plates**

Taps, Dies, Reamers, Etc.



PERFECT SCREWS AT A SINGLE CUT.



## Pneumatic Tubes

For Rapid Transmission of Cash, Orders, Papers, Documents. Used in Dry Goods Houses, Banks, etc. Write for estimates.

**Bostedo Pneumatic Tube Co.**  
Chicago, 156 Lake St.  
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Our Catalog of

**Screw Plates,**

Taps, Dies and Reamers will interest you.

A. J. Polk & Son.

Millersburg, Pa.





## "Abrasive" Emery and Corundum Wheels

are the best for fine work, rough work and general grinding purposes.

The Abrasive Wheels are carefully graded for their particular purpose.

The Abrasive Wheels are made to cut evenly and regularly; the best cutting material only being used in their manufacture. Are durable and fast cutters; cut equally well wet or dry.

We will be glad to give you full information, and we believe a trial will make you a constant user. Tell us the kind of work to be ground and we will supply you with the proper wheel; not once, but always.

MADE BY

**The Abrasive Material Co.**  
Philadelphia, Pa.

NEW ORLEANS AGENTS: C. T. PATTERSON CO.

## Emery Wheels

Will Run Wet or Dry.

## CORUNDUM WHEELS.

Polishers and Machinists' Supplies, Rub Stones, Emery Wheel Machinery, and Diamond Tools.  
Vitrified Wheel Co., Westfield, Mass.

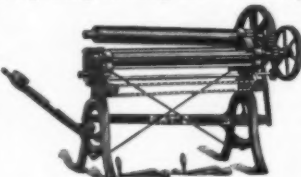


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Different styles for Squaring, Slitting and Trimming  
All sizes. Automatic Self-Opening

### Bending Rolls (revolutions)

Also Angle Iron Bending Rolls, Squaring Shears, etc., machines for working Sheet Metal.



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CAMBRIDGE CITY, IND.

LARGEST  
MAKERS OF  
**DRILL GRINDERS**  
IN THE WORLD.

**Wilmarth & Morman Co.**  
Grand Rapids, Mich.

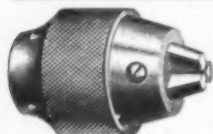
**Royersford Foundry & Machine Co.**

Builders of up-to-date

**Punch and Shearing Machines.**

Well built. Honestly rated. They are money makers. Catalogue free.

ROYERSFORD, PA., U. S. A.



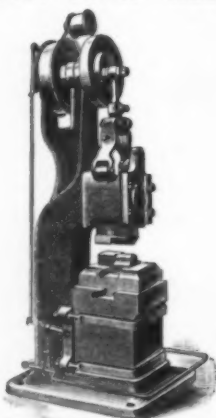
The SKINNER CHUCK MFG. CO.,

**SKINNER**  
Lathe, Drill & Planer  
CHUCKS.

We are pleased to mail 6"x9" illustrated Catalogue free.

New Britain, Conn.

## Dupont Power Hammer.



For Cotton Mill Repair Work, Machine Shops, Foundries and wherever a general **Utility Power Hammer** is needed. It has a large range of work; easy and simple to operate. Ask for Catalogue.

**The Dupont Manufacturing Co.**  
St. Johnsbury, Vt., U. S. A.

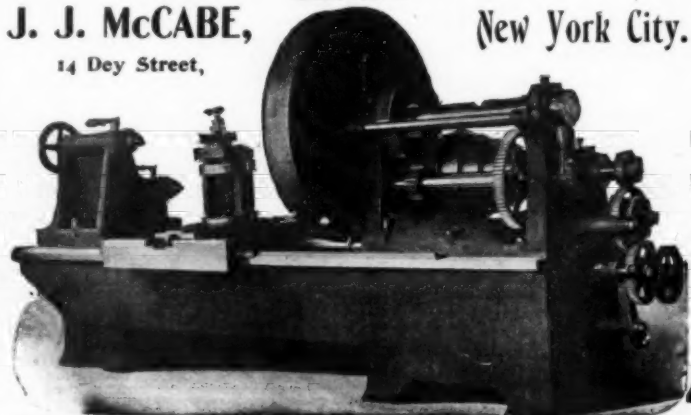
## McCabe's New Heavy Pattern 26-48 inch Patent Double-Spindle Lathe.

This McCabe Double Spindle Lathe is pretty nearly a whole machine shop in itself. In most shops its earnings will be fully equal to those of the ordinary lathe and the big heavy lathe whose places it is intended to fill, and the proportionate profits will be greater. This is so because many shops have to keep a big heavy lathe in idleness a good part of the time, and the interest on the investment counts considerably against profits, to say nothing about the waste of floor space, etc. This Lathe is two complete high-grade lathes in one. It has a 26 in. swing, back-gear'd, for ordinary work, and a 48 in. swing, triple-gear'd or with geared face-plate (ratio 66 to 1) to take care of extra heavy work up to the full swing. It has double the screw cutting capacity of any ordinary lathe, positive geared feed, wide range, hollow spindle with 2 1/2 in. hole and many other features that make it a dollar winning investment for the machine shop. Our new, free catalog goes to the bottom of the subject.

REAR VIEW.

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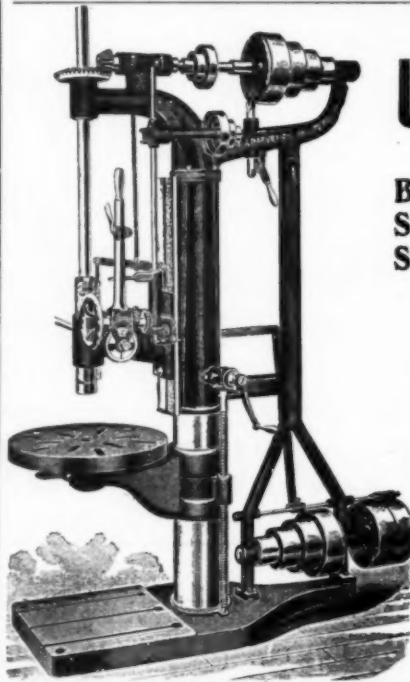
FOREIGN AGENTS—Schuchardt & Schutte, Berlin, Vienna, Brussels, St. Petersburg, Stockholm and Cologne. Chas. Churchill & Co., London, Birmingham, Manchester and Glasgow.

## BARNES' Upright Drills

COMPLETE LINE

Bench, Sensitive, Multiple, Series, Stationary and Sliding Head,

BACK GEAR and WITHOUT BACK GEAR.



This cut represents our New 26 in. Sliding Head Back-Gear'd Drill, with combined Lever, Wheel and Power Feed; automatic stop and quick return lever. The most rapid and most convenient working drill on the market today.

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**CAREY MACHINERY & SUPPLY CO.**

AGENTS, Baltimore, Md.



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WE can furnish you anything in the line of EMERY GRINDING and POLISHING MACHINERY, and would be glad to place a copy of our Catalog in your hands on application.

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BALTIMORE, MD.

Type Founders and Electrotipers

Write for Special Prices on SPACES and QUADS. We sell them cheap.

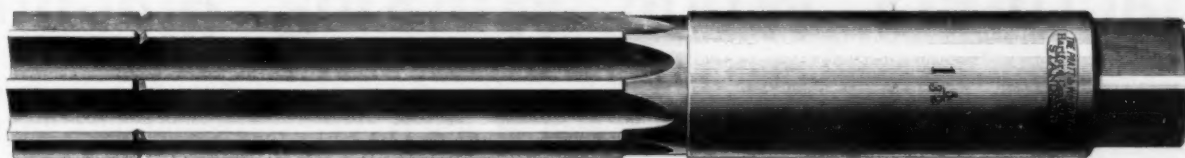
**CHAS. LEFFLER & CO.**  
49-61 Clymer Street,

BROOKLYN, N. Y.

PRESSES, DIES AND TOOLS.

SPECIAL MACHINERY.

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A complete line of Standard Reamers carried in stock. Hand, Shell, Rose, Locomotive Taper, Morse Taper and Taper Pin.

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SMALL TOOL DEPARTMENT.

Send for Catalogue of Small Tools.

You are cordially invited to visit our exhibit at the Pan-American Exposition, Machinery Building, Section 38.

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CHICAGO, 42 S. Clinton St.

BUFFALO, Corner Seneca and Wells Sts.

PHILADELPHIA, J. W. Cregar, Agency, "The Bourse."

MEXICO CITY, MEXICO, Robt. Boker & Co.

## "American" Radials

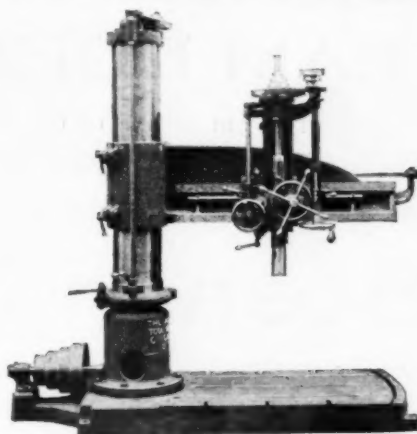
Among the many points of merit found on the plain Radial Drill here illustrated, the following should be noted:

Great convenience for the operator in manipulating head, back gears and tapping attachment.

Back gears on the head, making communication direct to spindle.

Sixteen speeds to spindle.

NO LOOSE NUTS OR WRENCHES.



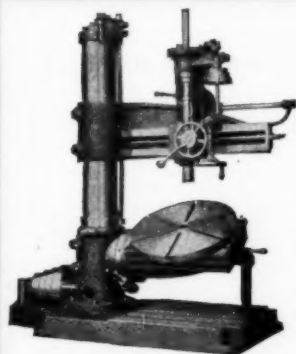
5' PLAIN RADIAL DRILL.

WE ALSO MAKE

Engine Lathes, 12" to 60" Swing,  
Planers, Shapers, Boring and  
Turning Mills,  
Upright Drill Presses,  
Screw Machines,  
Bolt Cutters, Pulley Lathes,  
Brass-Working Machinery, etc.

**THE AMERICAN TOOL WORKS CO.,**

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### A Bickford No. 0 Radial

is peculiarly adapted for use in light and medium manufacturing and will be found to possess a great many more advantageous features for turning out this class of work than an upright drill. All we ask is comparison and you will be convinced.

RED BOOK FREE.

**The Bickford Drill & Tool Co.**

CINCINNATI, OHIO, U. S. A.

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### Range Manufacturers' Brake, New Style.

6 Foot Geared Hand and Power Range Brakes.

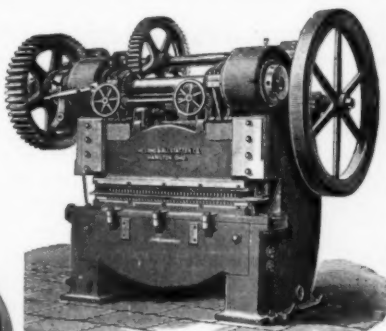
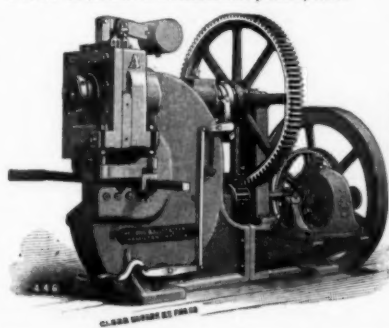


End  
Closed.  
Four  
Foot  
Open  
End  
Brake.

J. M. ROBINSON & CO., Cincinnati, Ohio.

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BEAM COPING MACHINES,  
RIVETING MACHINES,  
TIRE WELDING MACHINES,  
DROP & HELVE HAMMERS, etc., etc.



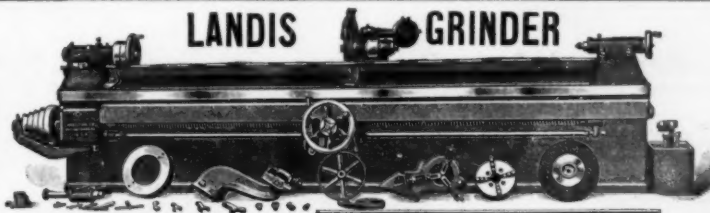
DESIGNED AND MANUFACTURED BY

**THE LONG AND  
ALLSTATTER CO.**

HAMILTON, OHIO, U. S. A.

Correspondence Solicited.

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**THE UNIVERSAL** has no superior for finishing up the run of Tool-Room and Machine-Shop Work. It is built in 8 sizes and constructed to do its work accurately and economically. Illustrated pointers for the asking.

LANDIS TOOL CO., WAYNESBORO, PA.

**TOOL STEEL FACED IRON DIES AND PUNCHES**  
FOR ALL KINDS OF STAMPINGS.

**Die Blocks, Shafts, Cams, Cranks and Machine Forgings**  
OF ALL KINDS.

**JOS. DYSON & SONS,**

HAMILTON STREET,

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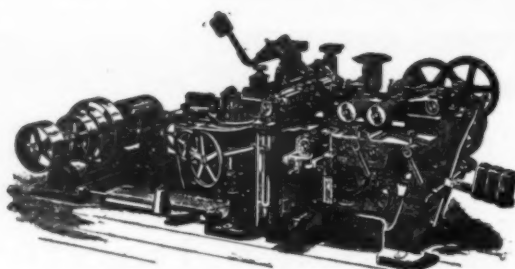
'Phone 2263.

**Advertise in the Manufacturers' Record.**



# Manufacturers Wood Working Machinery.

THIS MACHINE  
IS THE  
LATEST AND MOST IMPROVED  
MOLDER  
WHICH WE HAVE BUILT.



NO. 14-9" STANDARD FOUR-SIDED MOLDER.

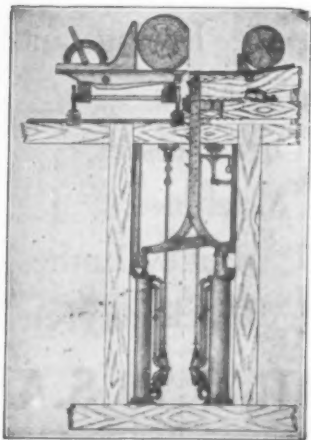
"GRAND PRIX," PARIS, 1900.

Write us for Prices and  
Full Particulars.

TREATISE ON CARE OF BAND SAWS  
SENT FREE.

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Yes, a puff of steam in one of our Niggers will load or turn your log and do it better and quicker than half a dozen men. If you want to save time, labor, and, incidentally, money, you should order a

## Hill Steam Nigger

Write for our new Catalog "A" and find out all about them. Remember, we build "EVERYTHING FOR THE SAW MILL."

WM. E. HILL & CO., N. Park Street,  
KALAMAZOO, MICH., U. S. A.

MANUFACTURERS.

### E. C. ATKINS & CO.

MANUFACTURERS.

Made from Finest Selected Steel.  
SOLID TOOTH.

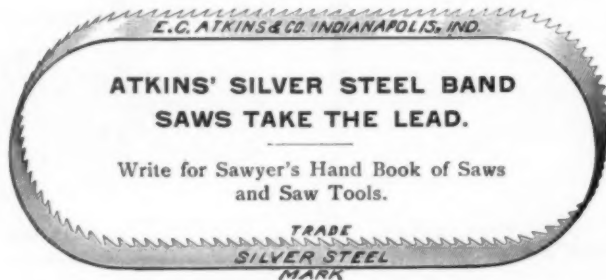
Indianapolis, Ind.

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HOUSES

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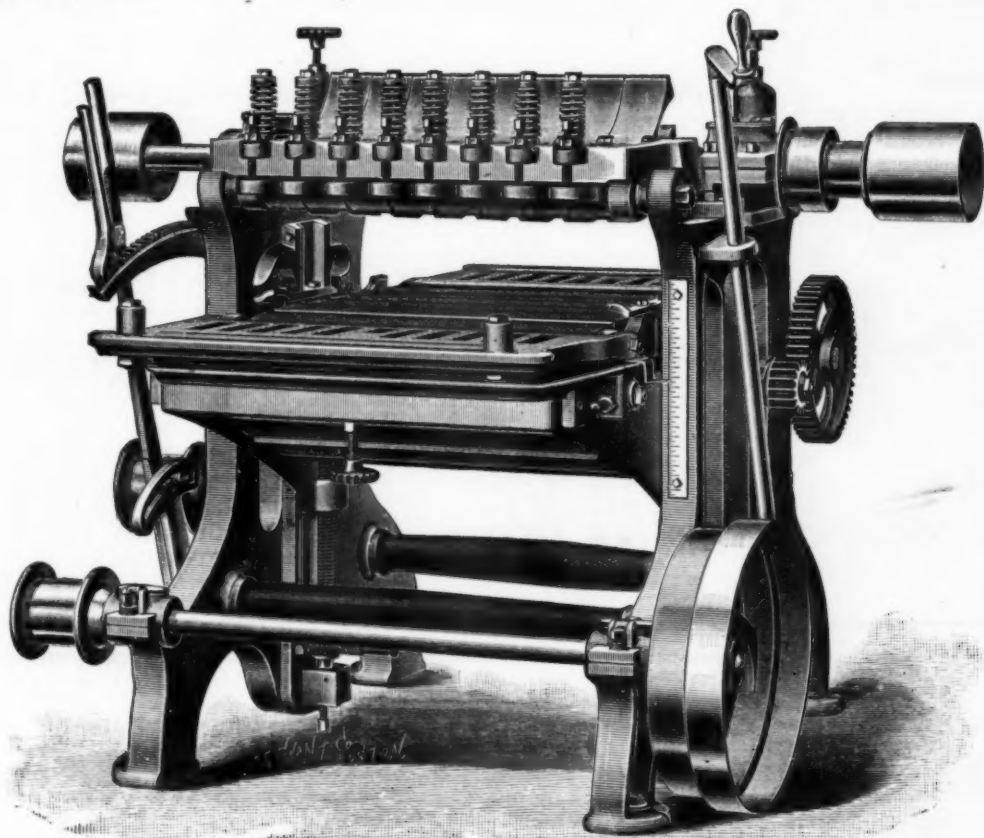
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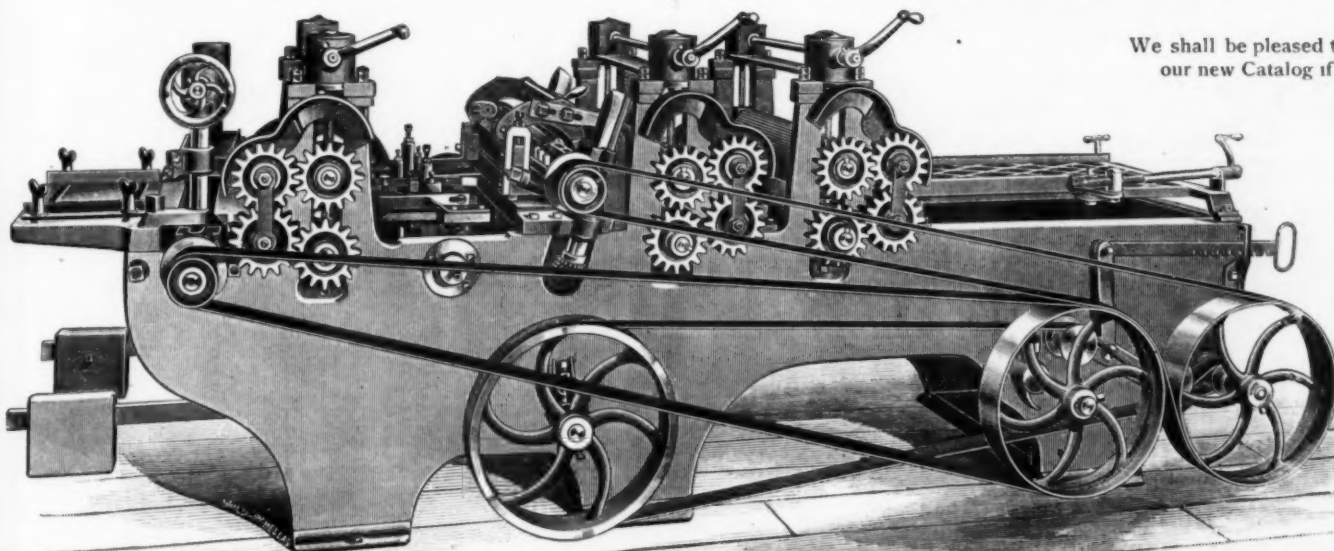


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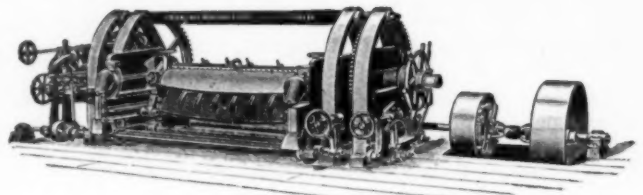
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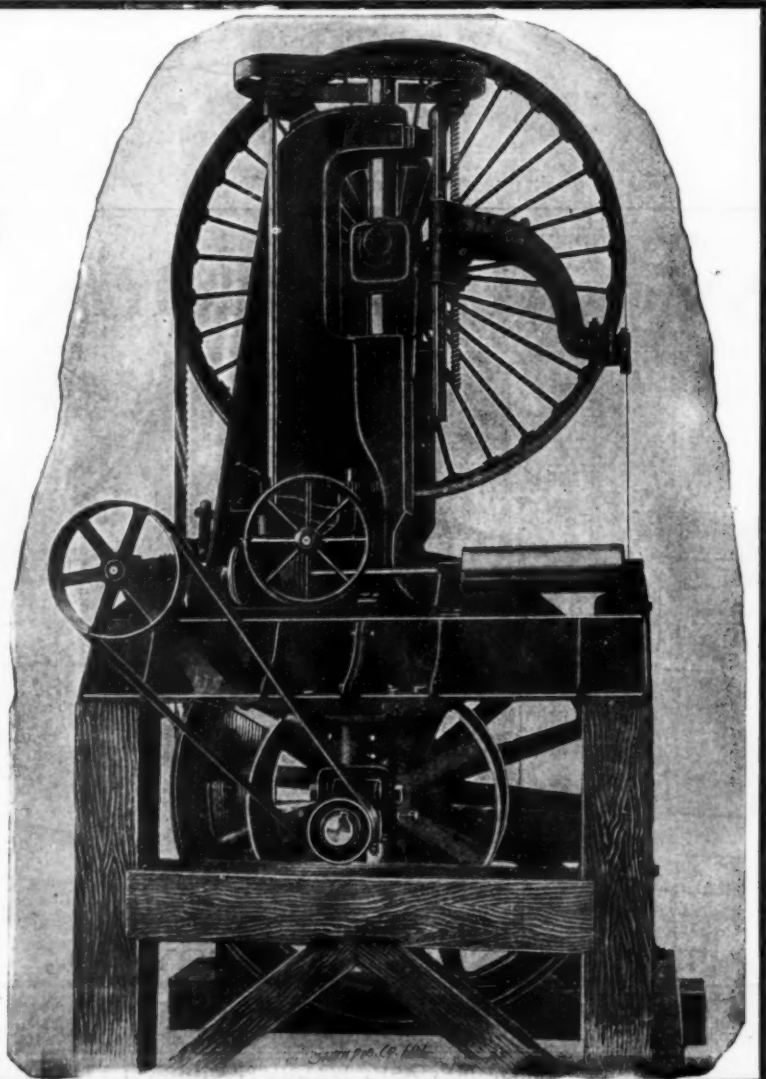
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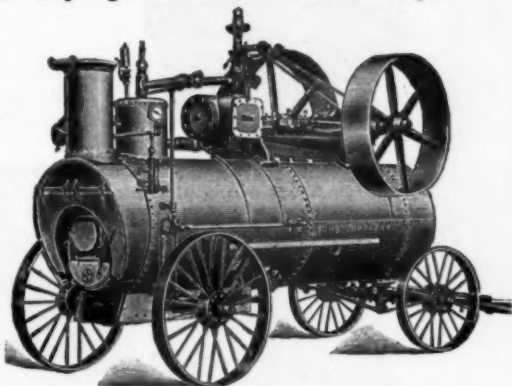


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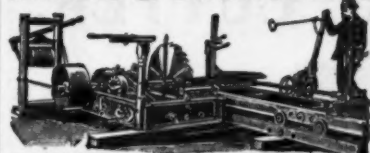
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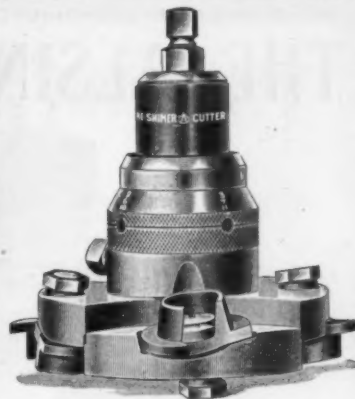
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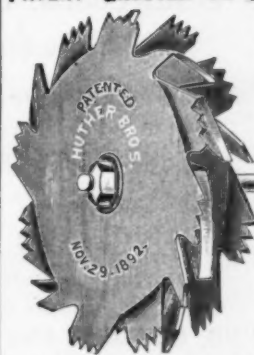
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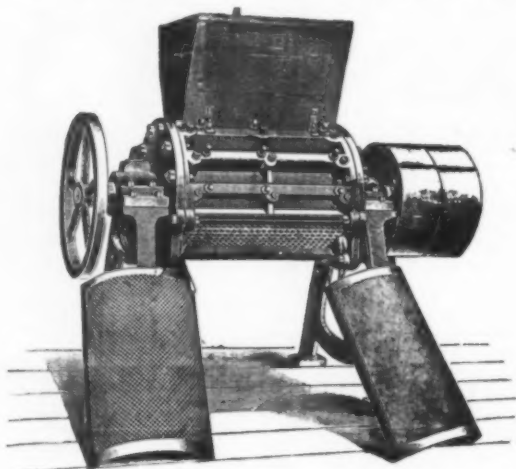
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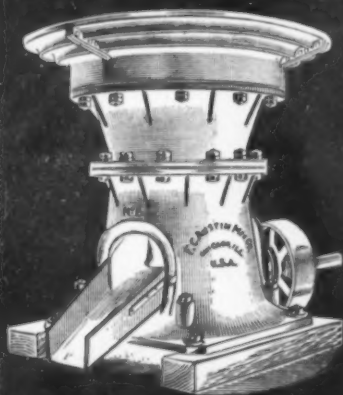
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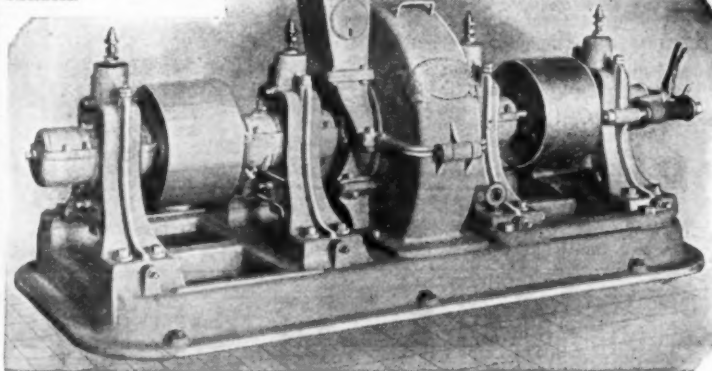
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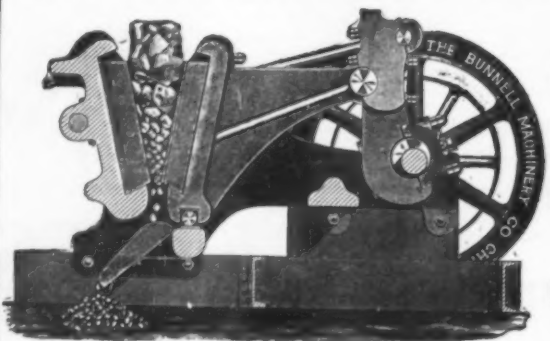
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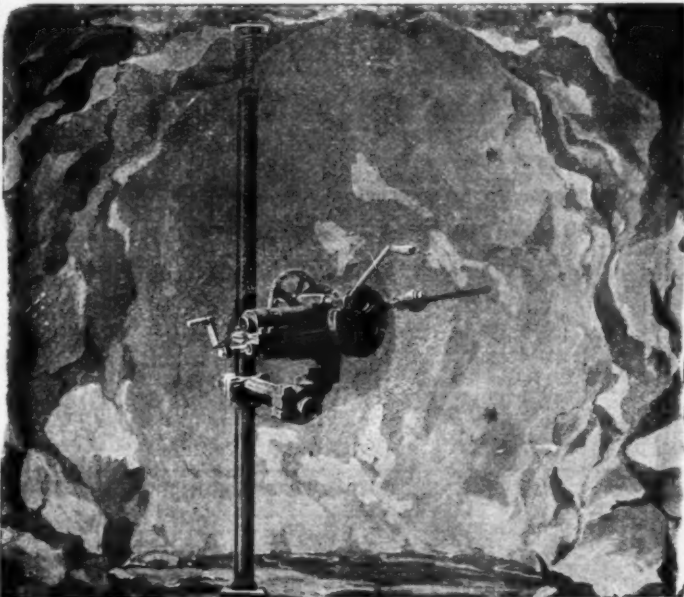
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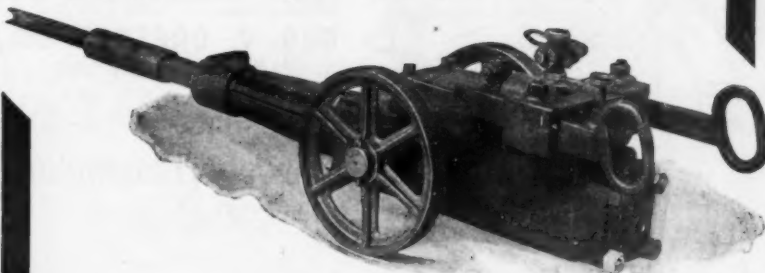
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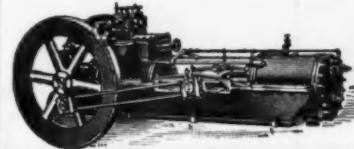
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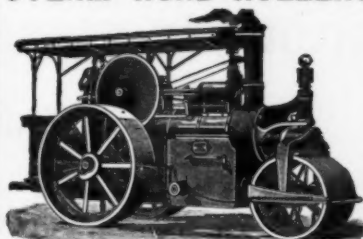
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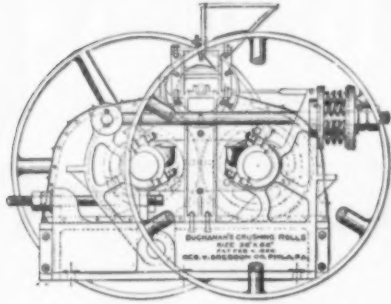
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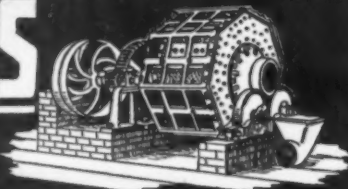
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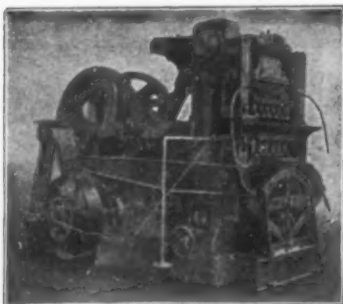
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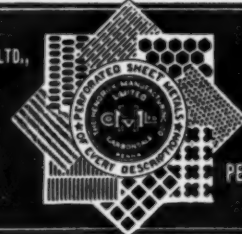
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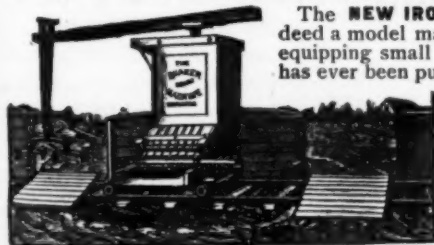
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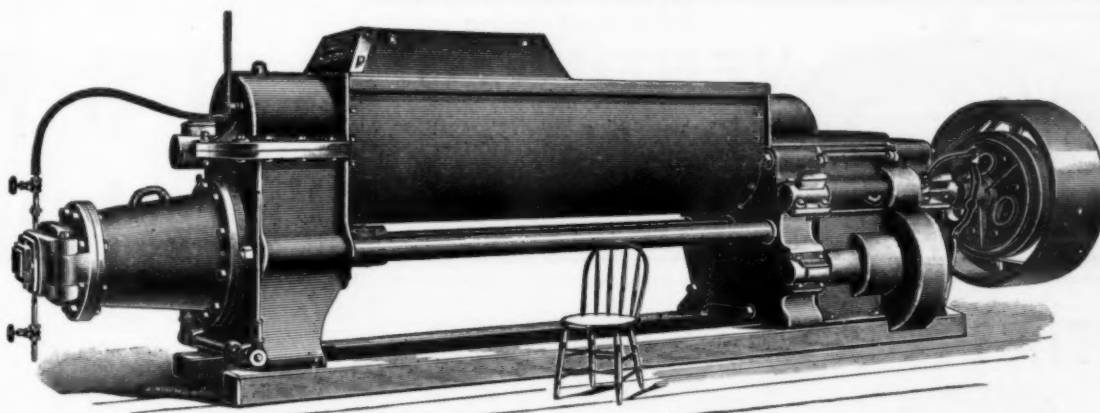


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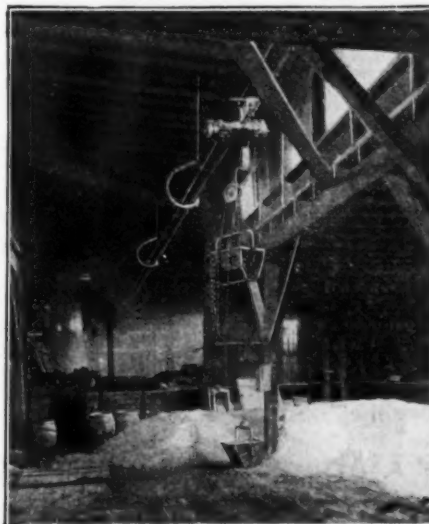
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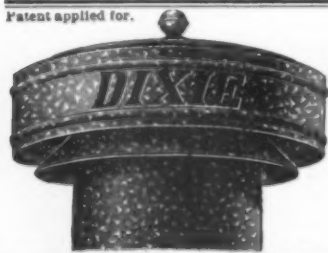
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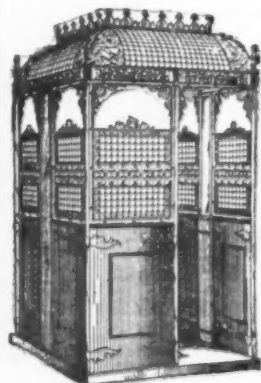
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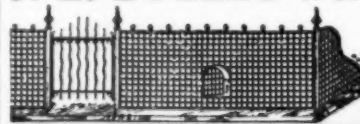
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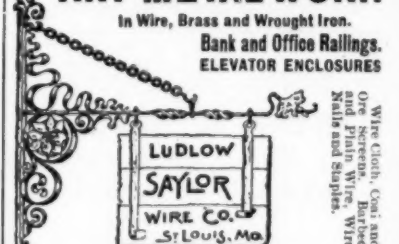
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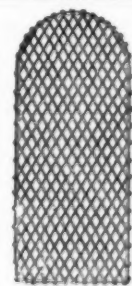
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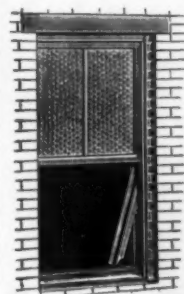
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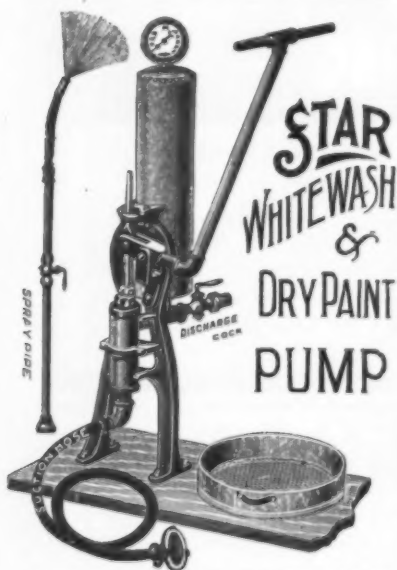
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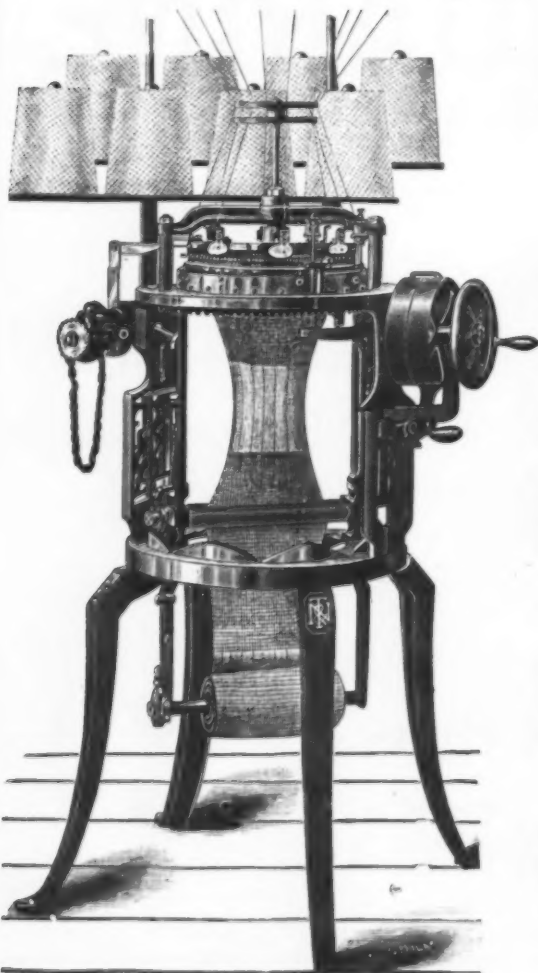
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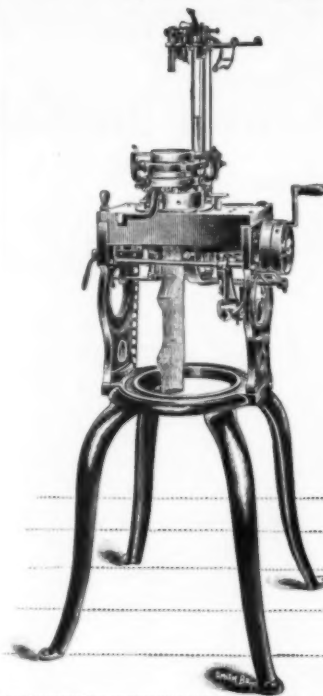
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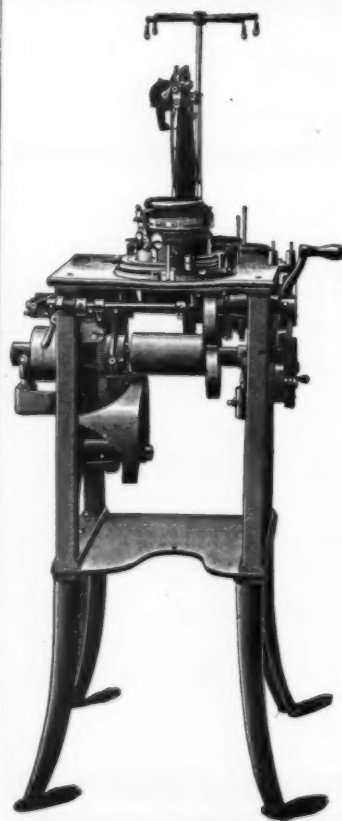
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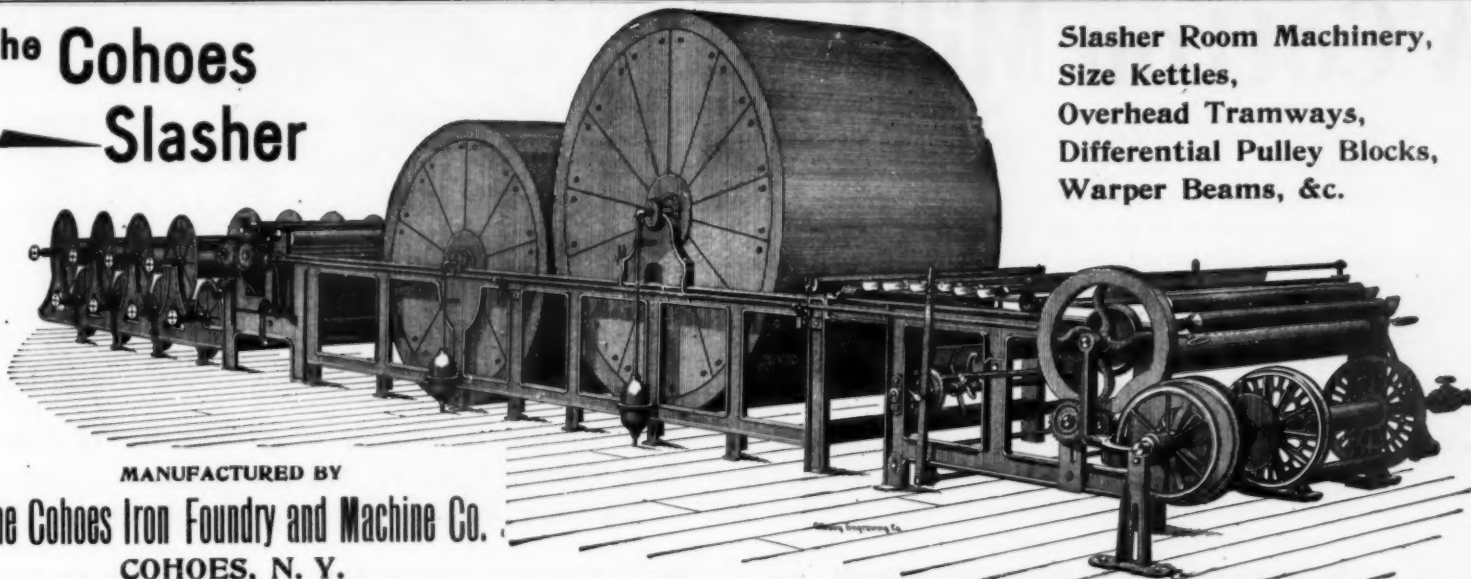
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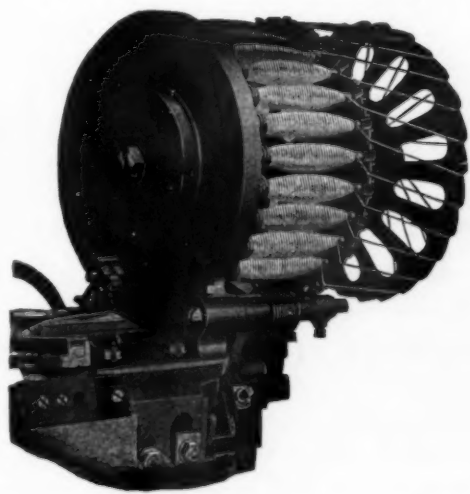
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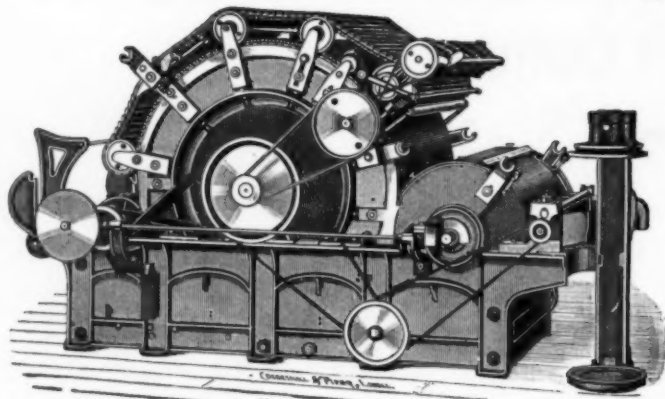
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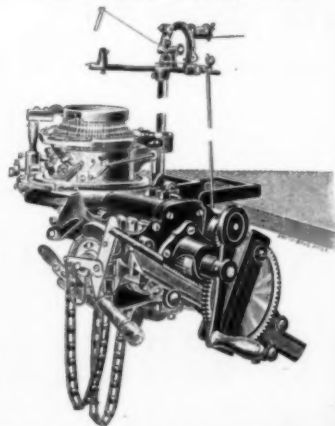
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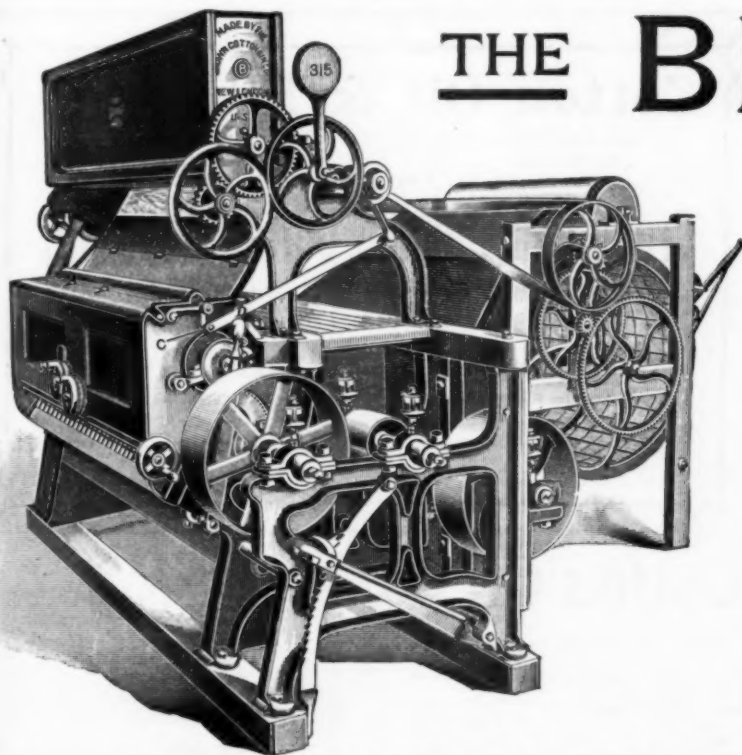
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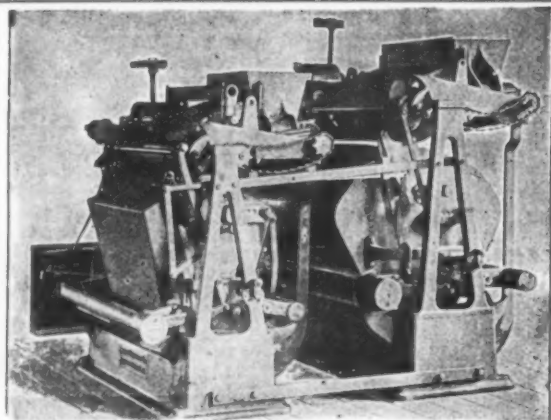
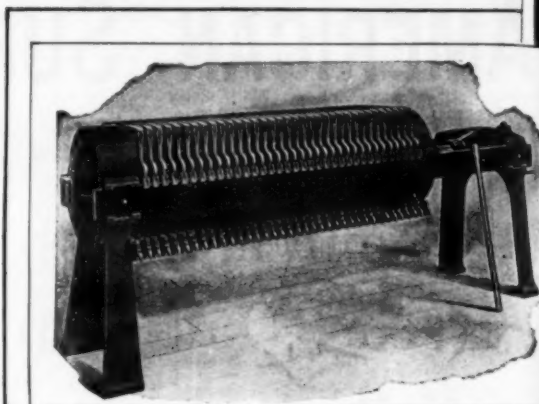
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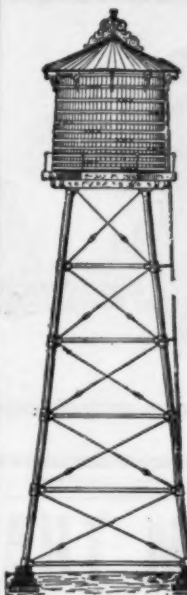
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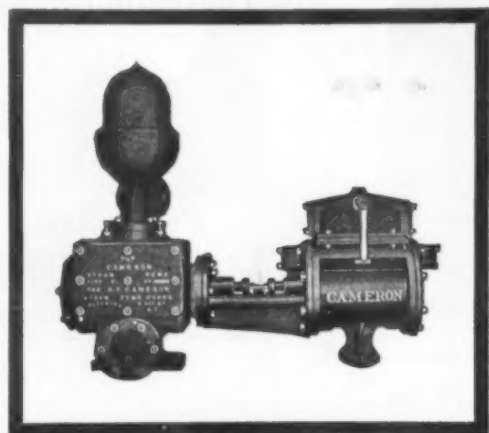
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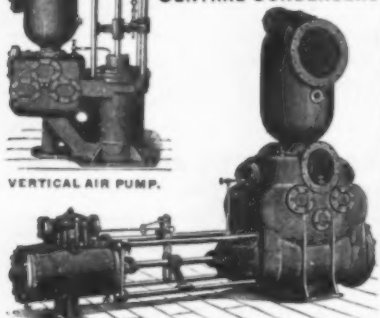
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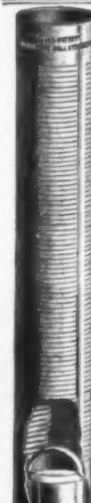
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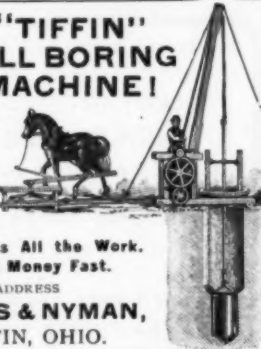


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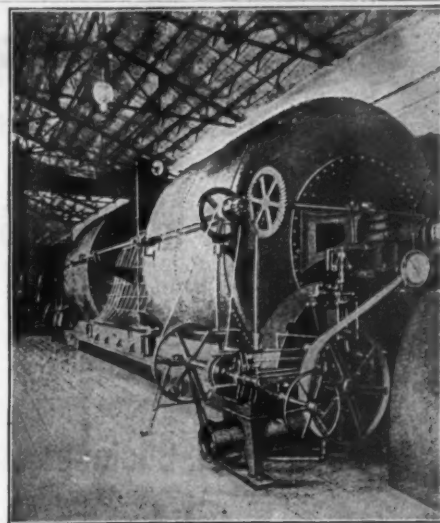
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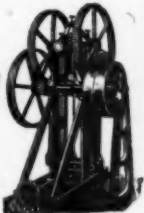
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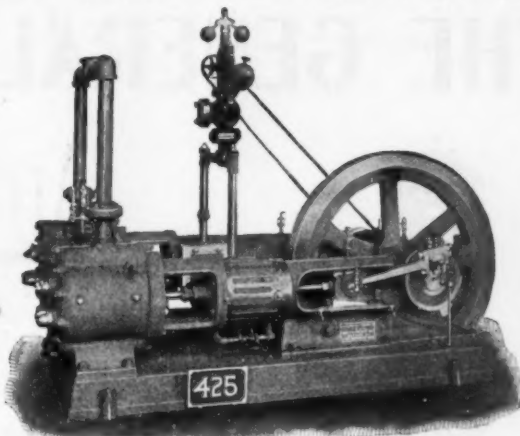
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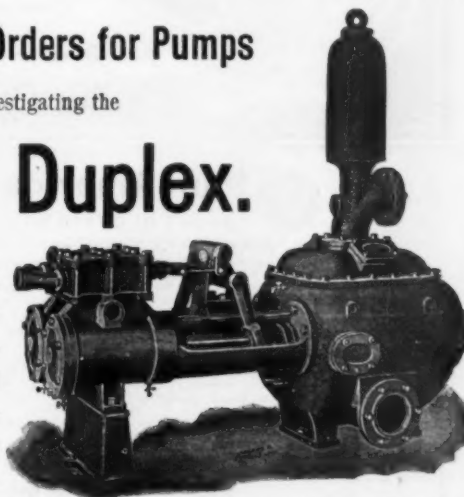
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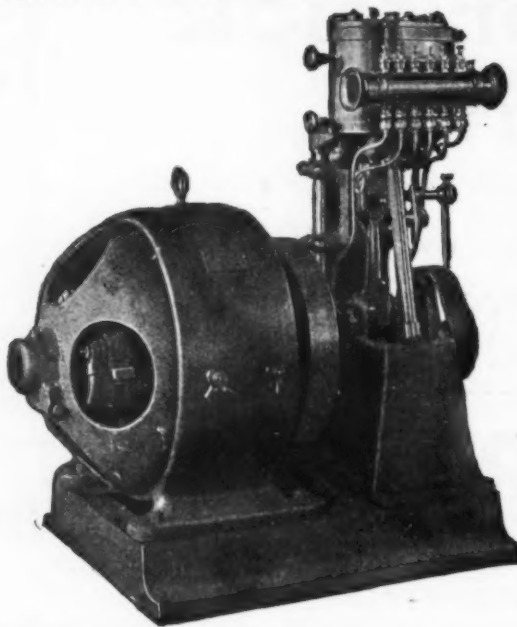
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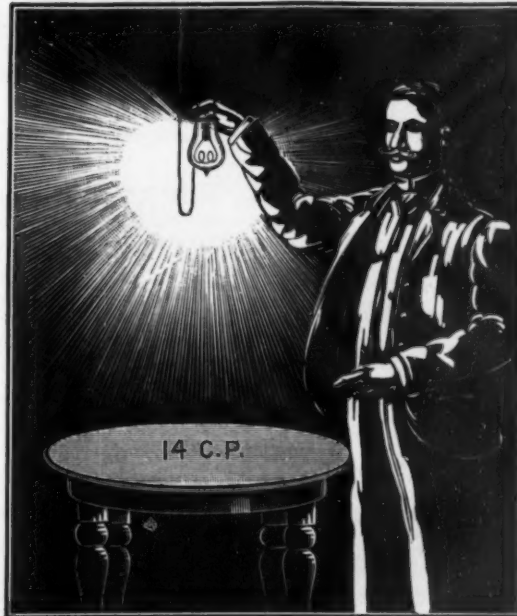
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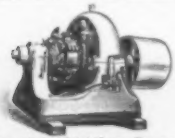
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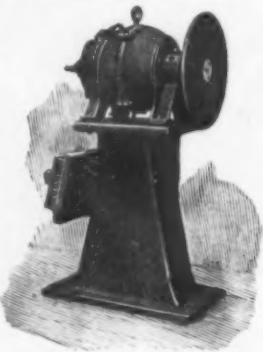
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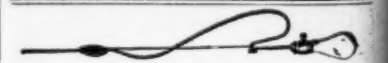
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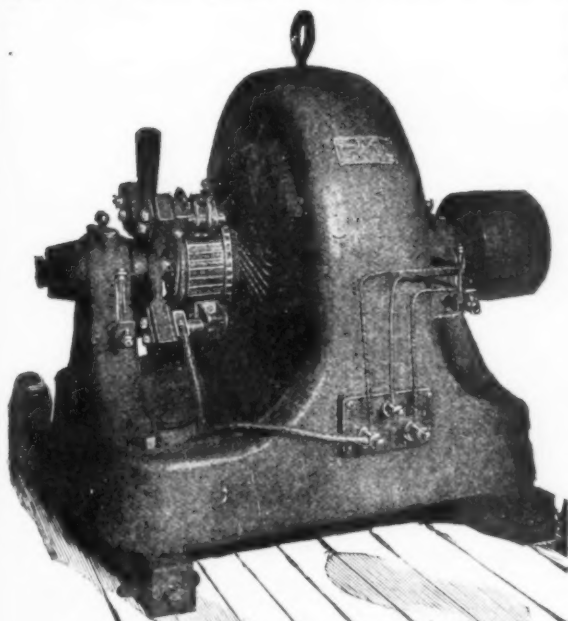
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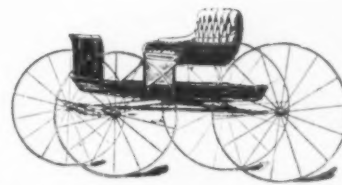
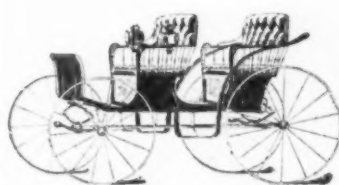
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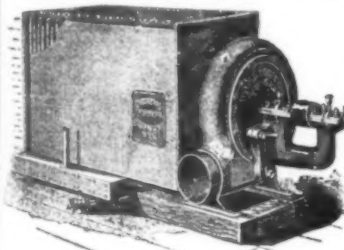
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